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THESIS

HOUSEHOLD GOODS SHIPMENTS:

"Tender of Service for Unpacking"

A COST SAVINGS PROPOSAL

by

Matthew T. Gardner-Brown

June, 1991

Co-Advisors:

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Household Goods Shipments:
"Tender of Service for Unpacking"
A Cost-Savings Proposal

by

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Lieutenant, S.C., United States Navy
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Submitted in partial fulfillment
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ABSTRACT

This thesis attempts to prove that cost-savings are attainable within the present Department of Defense Household Goods Personal Property Movement System. Using a sample population of officers attending the Naval Postgraduate School, the author evaluates personal property moves within the continental United States and focuses primarily on accessorial services, which include packing/loading and unloading/unpacking, for the purpose of presenting a moving option regarding unpacking at shipment destination. Two alternatives are proposed that have the potential to yield substantial dollar savings to the government.



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I. INTRODUCTION

A. RESEARCH RATIONALE

As we enter the decade of the 90's, the United States Department of Defense finds itself in a period of fiscal constraints. Economic restrictions and budget cuts are evident in all sectors of government.

Logistical courses taught at the Naval Postgraduate School made this author aware of potential dollar savings which can be achieved at the grassroots level. In a Contracts Management and Administration class, the opportunity arose to research a government contract. The subject of personal property moves was selected because of a desire, on the part of the author, to learn more about how the Navy contracts for household goods (HHG) shipments.

While analyzing a HHG contract, the author was astounded to learn that the Department of Defense (DOD) pays for a "full service" moving contract, even when certain moving services are not utilized. The author, having made five government sponsored moves over the course of eight years (and been professionally unpacked only once), wondered if a majority of military members actually unpacked themselves. Two questions which the author initially sought to answer were:

- How many other military members decline to use unpacking services?
- How many dollars are paid annually for a service that is not used?

The rationale for researching and writing this thesis is to examine whether the millions of dollars allocated for transportation usage are being spent for services often not used by military members and, if there is a feasible alternative through which shipping expenditures could be reduced.

B. OBJECTIVE

The objective of this thesis is to attempt to prove that cost-savings are attainable within the present Department of Defense Household Goods Personal Property Movement System. More specifically, the author's hypothesis is that most DOD personnel do not use the unpacking services offered by the existing HHG contract (even though the contract calls for payment regardless) because they prefer to unpack themselves for various reasons.

C. RESEARCH QUESTIONS

The primary research question and focus of this thesis is:

- Can government moving contracts be restructured and designated as:

"packing/transporting of household goods only" or
"packing/transporting/unpacking of household goods",
with payment to carriers reflecting actual services
rendered, to yield a potential dollar savings to the
United States government?

To answer the primary research question, several subsidiary questions are developed:

1. Which factors contributed to the development of the modern military transportation system and its dependence on private carriage companies?
2. How does the government pay carriers for shipments of household goods?
3. What percentage of these shipments utilize unpacking services of the moving company?
4. Based on the number of annual military moves, is this an area where possible cost-savings can be achieved and feasibly implemented?

D. SCOPE

The scope of this thesis is limited to an evaluation of personal property moves in CONUS with no in-transit storage. For the purpose of presenting a single cost-savings proposal, this thesis will examine the "Code 1" method of shipping (explained in Chapter II, Section C, Part 4) because it is the most commonly used method of moving personal property shipments within the continental United States.

In order to prove the hypothesis, the author selected a population of convenience: all Navy students attending the Naval Postgraduate School (for a duration of eighteen to thirty-six months) in Monterey, California, during the spring academic quarter of 1991. This population is not a representative cross-section of the Navy population-at-large, because it is specific to the ranks of O2 (LTJG) through O5 (CDR), and has a disproportional ratio of lieutenants (O3).

The thrust of this thesis is not to question efficiency of the Military Traffic Management Command (MTMC) itself, but to explore the possibility of providing its customers (DOD civilians and military members) with a "moving option" regarding unpacking at a destination.

E. REVIEW OF LITERATURE

An extensive review of literature was undertaken with the help of a customized bibliography from the Defense Logistics Studies Information Exchange (DLSIE) at Fort Lee, Virginia, and the Dudley Knox Library at the Naval Postgraduate School in Monterey, California. Material relevant to this subject included books, journals, other theses, as well as documents and publications containing policies, procedures, and regulations applicable to the function of shipping HHG.

F. PREVIEW

- Chapter II will review the history of the Personal Property Program. It will also present an overview of the Military Traffic Command's mission.
- Chapter III shows how a few representative companies of the private sector are managing HHG shipments for their employees, and discusses innovative methods which have the potential for incorporation into the military Personal Property Movement System. A synopsis of interviews with local agents of the Motor Carrier Industry is presented.
- Chapter IV focuses on the survey methodology, beginning with an overview of the general approach used in this thesis. The discussion of methods includes sample subjects, the questionnaire and procedures.
- Chapter V presents the survey results through graphical representation and a thorough explanation of questionnaire data. Analysis of data is followed by a discussion of statistical correlations and a summarization of results.
- Chapter VI proposes cost-savings alternatives to the present system of contracting the unpacking portion of household goods shipments, and shows the calculations on which the cost-savings proposals are based.
- Chapter VII includes a thesis summary, conclusions and the author's recommendations.

II. BACKGROUND

A. HISTORICAL INFORMATION

1. Personal Property Program

The beginning of a "Personal Property Program" can be traced to the late 1940's, following World War II. At this time, the federal government passed several pieces of legislation that affected personal property movement. These were the Public Law 604 of 1946 (which instructed the military services to develop uniform moving procedures); the National Security Act of 1947 (which established the Department of Defense, and its charters which attempted to eliminate overlap in military procurement and transportation, including household goods shipments); and the Career Compensation Act of 1949 (which provided the Armed Forces with authority to move military personnel's household goods, and established uniform policies for all services governing personal property shipments). This latter act recognized the need to provide "high quality moving services as one means to maintain first class personnel". [Ref. 1]

In 1956, the DOD began to centralize the management of all land traffic (including the HHG Program) under one agency: the Military Traffic Management Agency (MTMA), which subsequently was reorganized and became the Military Traffic

Management Command. MTMC was responsible for revising the household goods policy for all the services and writing instructions to govern HHG traffic management.

During the 1960's and 1970's, regulations concerning military traffic management were developed in cooperation with the moving industry. Certain provisions were revised to eliminate the possibility of monopolies by the largest carriers and to ensure equitable distribution of government household goods traffic among all qualified members of the motor carrier industry.

Under the MTMC Command, there are approximately 1,200 transportation officers working in the transportation offices (some of which are specifically Personal Property Services Offices) located on military installations throughout the United States. During a typical year, the Command issues approximately 93,000 domestic routings, quotes 246,000 freight rates, and receives some 20,000 rate tenders for moving almost 27 million tons of DOD cargo. The cost of all this is roughly \$709 million dollars. [Ref. 2]

B. MILITARY TRAFFIC MANAGEMENT COMMAND

1. Mission

The mission of the Military Traffic Management Command, as we know it today, is "to meet military transportation needs in peace and war, with emphasis on service and economy". [Ref. 3] This includes providing passenger and personal property traffic management for DOD and the services to ensure that passenger and personal property movements are safely and effectively completed at least cost to the government. [Ref. 4]

Since the military services do not maintain the transportation capability to meet their own movement requirements, great reliance is placed on our nation's private transportation industry. Within the Continental United States (CONUS), the nation's railroads, trucking companies, airlines, and shipping firms provide the strategic mobility to ensure that Department of Defense forces and cargo get to their destinations safely and on time.

Personal property is the single most expensive commodity transported by DOD. In a typical year, HHG shipments cost DOD approximately \$2 billion. The program affects every member of the Armed Forces, as well as Department of Defense civilians; and involves more than 800,000 personal property shipments each year. [Ref. 5]

The mission of the Personal Property Services Offices is to:

- counsel personnel preparing to relocate to new duty stations or leaving government service;
- arrange for packing, storage, and transportation of household goods;
- prepare supporting documents;
- inspect incoming and outgoing personal property shipments;
- process claims for personal property damaged in transit; maintain quality control records on carriers, and all necessary files and records. [Ref. 6]

C. DOD INSTRUCTIONS

The "bible" of the Department of Defense Personal Property Management Program is the DOD Instruction 4500.34R, the Personal Property Traffic Management Regulation (PPTMR). This document was developed by the Military Traffic Management Command and, in 1971, approved by all branches of the Armed Forces and the Office of the Secretary of Defense. A copy of "Chapter II" and "Appendix A" of the PPTMR is provided to any motor carrier who desires to contract with the government for Department of Defense HHG shipments. "Chapter 2" provides guidance and establishes procedures for the worldwide shipment and storage of household goods. [Ref. 7] "Appendix A" of the PPTMR is actually a "Tender of Service", and as such, its submission indicates a desire on the part of a carrier to

contract for service to DOD. A copy of a "Tender of Service" signature sheet can be found in Appendix A of this thesis. In addition, the Appendix lists assorted paperwork required for submission of a "Tender" to MTMC in Norfolk, Virginia.

1. Contractual Agreement

A "contract" is defined as a promise or set of promises for the breach of which the law gives a remedy, or the performance of which the law in some way recognizes as a duty. [Ref. 8] The "Tender of Service" is the basic service agreement between the shipper (in this case the military) and the carrier; and a signed "Tender" is contractually binding. Among other things, the "Tender of Service" defines what types of moving services the government requires a carrier to furnish. It further specifies the standards for packing/unpacking, loading/unloading, transportation, storage, documentation and reporting requirements. It is supplemental to Chapter 2 of the Personal Property Traffic Management Regulation, in that it fully explains the minimum requirements for moving HHG within CONUS.

a. Goal of the Personal Property Program

With reference to traffic allocation decisions, the stated goal of the domestic Personal Property Program is:

"...to award traffic to the carrier that consistently provides quality service at the lowest overall cost. To accomplish this goal, domestic HHG traffic distribution is based on both the levels of rates and the quality of each carrier's past performance. Traffic shall be offered only to those carriers maintaining a satisfactory level of performance (according to the "Carrier Evaluation and Reporting System"). The carrier's rate level, the number of qualified carriers serving the installation, and the amount of traffic available for distribution shall determine the amount of traffic offered to each carrier." [Ref. 9]

b. Standard Operating Procedure

Once MTMC receives a "Tender", it is reviewed and evaluated for acceptance. The evaluation process looks at whether or not the carrier can provide the required services at the minimum standards, as well as the firm's financial status. Once a firm is accepted, it is placed on the tonnage distribution roster of qualified carriers. This listing is then sent to the appropriate area Personal Property Transportation Office where it, along with the "Accepted Rates Report" sent out semi-annually, is used by the local Transportation Office in the awarding of contracts. [Ref. 10]

2. Carrier Evaluation and Reporting System

Personal Property Management Specialists at MTMC have a method for assimilating data about carriers, called the Carrier Evaluation and Reporting System (CERS).

[Ref. 11] The primary goal of the CERS program is to improve moving service quality for the military, through two operational objectives, which are:

- To provide for local evaluation of carrier performance, and to report this evaluation to a centralized collection point.
- To recognize and reward better carriers, while denying traffic to carriers not meeting minimum standards.

Instead of being a punitive quality assurance program, CERS is designed around a system of incentives; the reward being more traffic in a subsequent period. However, some punitive actions such as letters of warning, suspensions and disqualifications are used when necessary.

Carriers are evaluated in several different categories: [Ref. 12]

- Household Goods Operating Statistics (HOPES) program is designed to evaluate carrier performance, transit times, and arrival dates. Summary data is arranged to permit evaluation of carrier performance by all management levels from major command to installation.
- Violation of Tender of Service (VOTES) is designed to identify carriers who had been warned or suspended. It permits consolidation of local warnings, suspensions, and other actions taken by the ITO against a carrier.
- Loss/Damage and Claims Data is a system which provides data on causes of loss and damage, number of claims per carrier, claim amounts on a carrier-by-carrier basis.

- Origin/Destination Inspection System which gathers quality control information from both origin and destination sources, based on customer satisfaction and inspectors' reports, and is used to evaluate carrier performance with regard to several different quality control items. (Sample form shown as Appendix B of this thesis.)

Although performance ratings (superior, excellent, standard, and unsatisfactory) based on CERS are important, price is the single most important determinant used by the traffic manager in awarding military HHG shipments to carriers. Traffic is allocated first to carriers representing the lowest rate level. As an example, suppose that in one of MTMC's performance cycles (May to October) "Carrier A" handled ten shipments and achieved an overall superior ranking. Suppose that over the same cycle "Carrier B" handled ten shipments and achieved an overall excellent ranking. Then, if "Carrier B" submitted lower rates than "Carrier A" for the next cycle (November to April), it would be awarded traffic before "Carrier A". In other words, traffic will be awarded to those carriers providing quality service at the lowest overall cost to the government. However, if the low rate level is provided by several carriers, then traffic would be allocated according to performance scores.

3. Transportation Operational Personal Property Standard System

Another system recently implemented, and currently being refined, is called the Transportation Operational Personal Property Standard System (TOPS). It is a computerized program which will streamline the management information system of the Personal Property Shipping Offices of the Department of Defense. [Ref. 13] MTMC is presently involved in automating many personal property functions with the installation of this new computer system. TOPS automates the documentation associated with counselling sessions, inbound and outbound processing, non-temporary storage, and quality assurance. The CERS function will be a part of the quality assurance module. This module will automatically produce shipment evaluation and inspection records, carrier evaluation worksheets, generate letters of warning, maintain carrier performance files, and update traffic distribution rosters with CERS performance scores. [Ref. 14]

TOPS allows each branch of the Armed Forces to deal with its own unique requirements and those of other branches. "The result is greater efficiency, increased economy of resources and improved service to its members." [Ref. 15]

4. Shipping Methods

In an interview with the Personal Property Transportation Office Supervisor[Ref. 16] at the Naval Postgraduate School, the definition of household goods was established as: furniture and furnishings or equipment, clothing and baggage, personal effects, professional books, papers and professional equipment, and all other personal property associated with the home or person, including tools and spare parts for personally owned motor vehicles (excluding the actual vehicles).

There are various methods by which personal property can be shipped. Those pertaining to CONUS moves and the topic of this thesis are: domestic motor van shipments (Code 1), domestic container shipments (Code 2), unaccompanied baggage (UB), and direct procurement method (DPM) .

Shipments of personal property under 2,000 lbs are usually made using DPM. The government manages the shipment throughout the DPM moving process.[Ref. 17] Under this method, the responsibility of line-haul movers is to pick up and deliver consolidated shipments at the storage warehouse of designated moving companies and commercial storage firms. Arrangements for obtaining the services of line-haul movers are made on a national basis by MTMC. Packing, containerization, local drayage, and storage services are obtained from the private sector under contractual arrangements; or by the use of government facilities and

personnel (such as any military installation with large warehousing and storage operations).

Unaccompanied baggage consists of items needed immediately upon arrival at member's destination. These items are packed and shipped separately from the main household goods shipment, and there are specific rules regarding when and how much UB may be shipped. [Ref. 18]

Domestic motor van and domestic container shipments are referred to as Code 1 and Code 2 shipments, respectively. Personal property shipped via Code 1 are HHG packed in boxes and blanket-wrapped in a moving van. The Code 1 method is utilized extensively within CONUS for shipments which are routed directly from a service member's home to his next destination, without using non-temporary storage (i.e., household goods are not placed into a storage facility for a period in excess of ninety days). Personal property shipped via Code 2 are household goods which are paper-wrapped with additional protection and moved in crates. [Ref. 19] The Code 2 method is normally used when shipments are going overseas, into non-temporary storage, or when MTMC anticipates that the shipment will be handled numerous times en route to its final destination. Each method of shipping has distinct advantages, disadvantages, and costs.

D. SYSTEM OF RATES

By law, the government cannot set any tariffs or rates. Prior to motor carrier deregulation in 1980, all rates were set by the Interstate Commerce Commission (ICC) under the title "Military Rate Tenders". After 1980, under ICC regulation #10726, DOD can "by exception" accept voluntary rates set by the carriers themselves.[Ref. 20] These voluntary rates are, in actuality, a percentage of an established baseline. The baseline was originally simply a repetition of the Military Rate Tenders. However, in 1984 a reevaluation was made using private sector data and the baseline was revised. The last update was made in 1986 using that year's data.

This data is provided to all qualifying carriers as the baseline upon which they can "bid" their "voluntary rates". For example, a carrier could specify that it would charge 75 percent of MTMC's baseline. If a carrier determines that a particular route is not conducive to their business, they will over-bid the baseline; e.g., 125% or more. This ensures that they will not be called on to do any business for that route, but keeps their name current.[Ref. 21] If, on the other hand, a particular route is highly desirable to a carrier, they may underbid the tariff, with the intent to make profit on the volume.

There is no maximum or minimum limit on the percentage a carrier can file. These bids/percentages are collected and

compiled every six months, effective 01 May and 01 November of every year. The report (Accepted Rates Report) is then sent to the appropriate local PPTO.

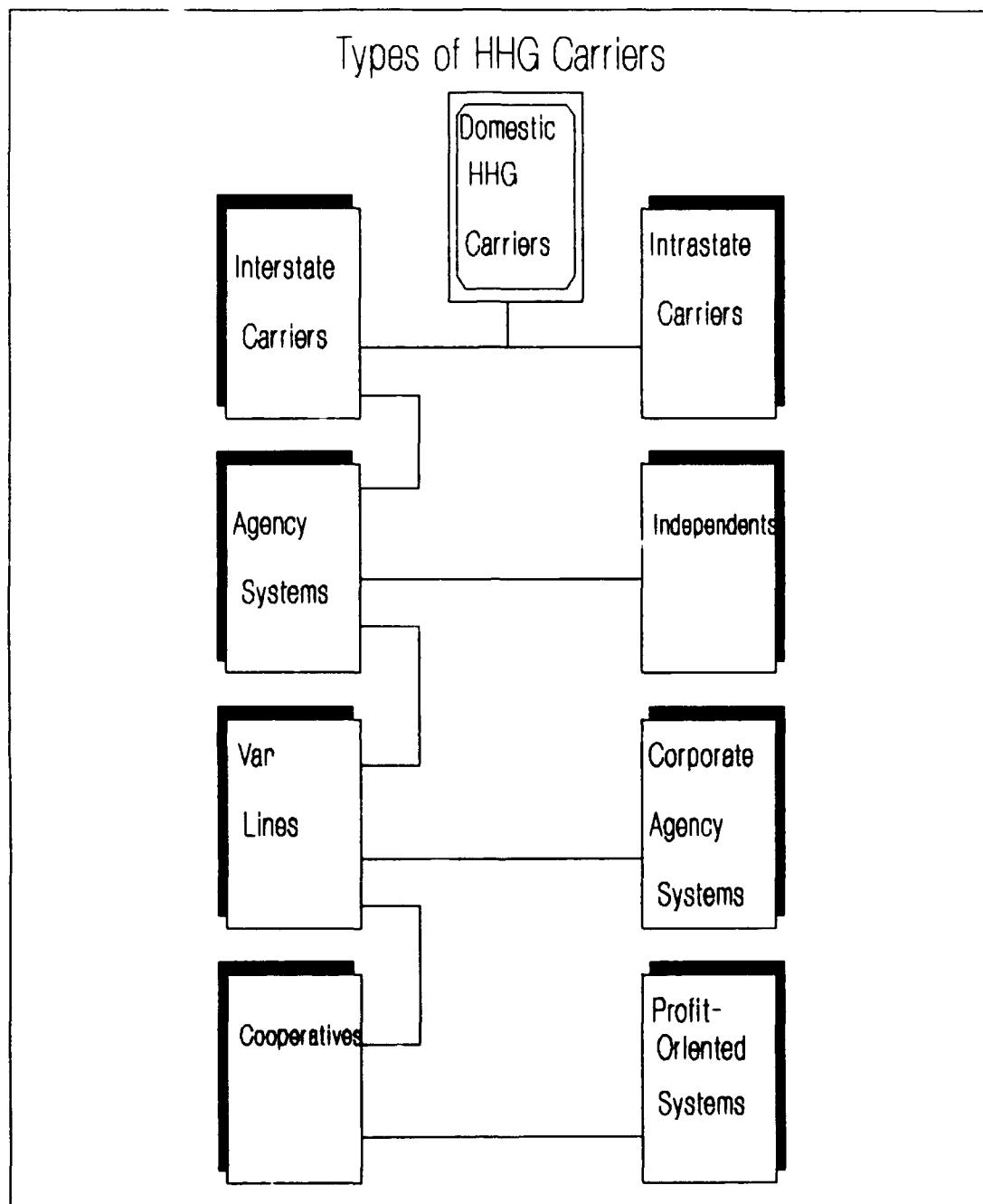
The local PPTO sets up a hierarchy of the qualified firms using each firm's bid/percentage. The initial low bidder, called the "prime" firm, will be given at least 50% of all incoming contracts. The next lowest will receive at least 50% of remaining contracts, and so on. This process contains a "me-too" provision for certain types of moves, in which other carriers can match the low bid and share equally in the remaining tonnage. [Ref. 22]

E. CARRIERS AND AGENTS

The Household Goods Transportation Industry consists of carriers, agents, and owner-operators. The various types of HHG carriers are illustrated in Figure 2.1 on the following page. [Ref. 23] The industry includes firms engaged in the transportation of property commonly used in a home, an office, museum, institution or hospital, and any articles requiring the specialized handling and special equipment used in moving household goods. Household goods movers are usually common carriers offering transportation services to the general public at published rates.

Figure 2.1

[Ref. 24]



As shown in Figure 2.1, the system is subdivided several ways. The first division is between interstate and intrastate movers. The second division of interstate carriers consists of agency systems (such as well-known van lines), and independents (which have proliferated this last decade since the 1980 deregulation of the motor carrier industry). Even though today there are fewer agencies than independents, the agencies are the dominant force in traffic and sales. [Ref. 24] Van lines were formed by groups of agents banding together to improve efficiency and increase income.

Agents provide many services including:

- Estimating the cost of a move.
- Selling packing containers to the line-haul carrier or to service members if they are doing self-moves.
- Performing packing services prior to loading.
- Arranging for or making a local pickup.
- Arranging for laborers to assist the owner-operator with the loading of cargo.
- Providing storage in transit.
- Arranging local delivery of cargo.
- Unpacking the cargo.
- Connecting appliances and general setup of furniture.
- Assisting with processing and settlement of claims.

Every carrier is required by MTMC to have a local agent to assist them in conducting their business at both the origin and destination. More importantly for the purpose of this thesis, the agent hires and supervises the packers and unpackers for each shipment. Once an agent accepts the arrangements for pick-up and delivery, a contract between the government and the carrier (which the agent represents) can be established. Once the shipment is packed, the carrier then transports it from origin to destination.

At the destination, the local PPTO (acting as intermediary between service member and carrier) makes arrangements for delivery with the service member and destination agent. The agent then sends employees to unload and unpack the shipment.

A noteworthy point (which will be subsequently discussed) is, according to the results of my survey, most people do not utilize unpacking services, and also are not aware that the government pays the carrier to unpack all boxes even if this service is not used.

F. PRE-MOVE COUNSELING

Pre-move counseling is an integral part of the military moving process. The counseling session covers everything from written instructions that are issued by the DOD, moving regulations, inventory forms, information about packing and pickup at origin, as well as entitlements regarding delivery and unpacking at destination.

Prior to a Permanent Change of Station (PCS) move, a service member, with official orders, makes an appointment with the local Transportation Office to request a personal property move. A counseling session ensues, where DD Form 1797 (shown as Appendix C of this thesis) is used by the counselor to ensure all pertinent areas regarding a PCS move are covered and explained. Required pick-up and delivery dates are established. Once the pre-move counseling session is concluded, the transportation officer calls the agent of the carrier who is at the "top" of the roster.

III. THE PRIVATE SECTOR

A. COMPARISON OF HOUSEHOLD GOODS MOVING METHODS

In the interest of making a comparison between DOD moving methods and those of the civilian world, the author contacted Transportation Managers of four large corporations representing manufacturing (GTE Service Corporation), business technology (IBM), oil and gas (ARAMCO), and insurance and banking (Chancellor Capital Management, Inc.).

Three out of the four companies explained that their system of personal property movement for their employees paralleled the system used by the Department of Defense. They solicit competitive bids from the motor carrier industry for "full service" contracts. Unpacking is a service provided to their employees. However, utilization of this service is not monitored by two of the four companies interviewed. In addition, representatives from ARAMCO and Chancellor Management stated that their companies have no immediate nor long-range plans to change the present system. [Ref. 25] The Program Manager of Relocation for IBM indicated that they are currently looking for ways to cut their employee relocation costs, and have recently started searching for innovative ideas to consider. [Ref. 26]

An article from Chilton's Distribution magazine cites GTE Service Corporation, which moves 3,500 personnel annually at a total cost exceeding \$11 million, as the real innovator in developing a quality customized program for corporate HHC transportation. [Ref. 27] Carrier selection is made by a joint Transportation, Human Resources and Insurance negotiating team. The company representative, interviewed by this author, stated that GTE places emphasis on the development of partnerships with certain carriers, in which they mutually work toward the goals of excellent pricing and employees who are satisfied with the relocating process. [Ref. 28]

In early 1989, GTE initiated a pay-for-performance system with its four designated HHC carriers. The system is based on ratings of all moves by relocating employees, as well as which moving services were utilized during the relocation process. During the pre-move counseling session, GTE apprises its personnel of their allowances and entitlements. Employees are then asked to make a decision about which services they will require. The carriers receive remuneration for transportation costs and services provided, and also receive incentive payments based on ratings (similar in nature to the CERS rating system previously mentioned in this thesis). GTE management feels that this type of relocation program has improved service to the employees and reduced overall costs.

[Ref. 29]

B. OPINIONS OF THE MOTOR CARRIER INDUSTRY

The author felt it would be useful to have an understanding, from the perspective of the motor carrier industry, of certain operational methods pertaining to personal property movement and unpacking services. A representative group of agents from private sector in the Monterey area was selected with the help of the NPS Personal Property Office Supervisor, Mrs. Elaine Woodard. She felt that some questions posed by the author could be best answered by members of the motor carrier industry.

Five questions were asked during telephone interviews (conducted March 26 through 28, 1991) between the author and owners of local moving and storage companies. In formatting these questions (listed on the following page), the author attempted to encompass all peripheral questions which could not be completely answered by MTMC or the local Personal Property Office. The responses are based on answers from the four (out of ten companies contacted) who agreed to participate in a telephone interview. These responses have been intentionally rewritten into a general nature to satisfy the overwhelming requests for anonymity. The conditions under which the owner-agents agreed to participate in the interviews were that the author would not publish specific quotes nor company names.

1. Questions Addressed to Agents

Question: In the Domestic Personal Property Rate Solicitation publication, it states that \$15.35 per hundred weight is paid for packing and loading/unloading and unpacking in the Monterey area. How do motor carrier firms breakdown the monetary division between packing and unpacking services?

Answer: There is no "hard and fast" rule, but consensus was between 15 and 20 percent for unloading and unpacking which are customarily grouped together for costing purposes.

Question: Would agents consider payment for unpacking services on an hourly basis, if unpacking is utilized by the military family, instead of having the unpacking charges incorporated in the rate scale as per the current contract?

Answer: All four agents interviewed by the author thought that this would be a more equitable system because they would have an incentive to provide a better service.

Question: Do agents bid under the realization that unpacking services are not generally required in connection with military household goods shipments?

Answer: The agents realize that unpacking does not represent a significant portion of the HHG moving contract and formulate their bids with this in mind.

Question: Could the moving companies reduce their overall bid if unpacking services were not required?

Answer: The consensus was that it would be possible to reduce their bids by 2 to 5 percent (of the money allocated for packing/loading/unloading/unpacking) if unpacking requirements could be eliminated from the current contract. A point made by one agent was that "deregulation" of the motor carrier industry has created excessive competition. This agent stated that many carriers must now bid lower rates (than the established tariff) in order to maintain a reasonable share of traffic and, since their margin of profit is lower on government moves, they could not reduce bids by more than five percent.

Question: How do military moves (specifically the contractual part of the personal property shipment that relates to unpacking) compare to civilian moves?

Answer: Civilian "John Doe" moves differ from civilian "Corporate" moves. A private individual selects from a "menu" of services offered by the moving company and will be charged a fixed rate, based on poundage/mileage, for services rendered. The corporation contract is most often a "full service" contract, and is bid closer to the established tariff than DOD household goods contracts. Unanimous consensus among those interviewed revealed that civilian corporate contracts are preferred because the potential for profit is higher and bonuses are sometimes paid for outstanding service.

From these telephone interviews, the author's impression was that the motor carrier industry would be receptive to a "Tender of Service" contract modification which eliminates the stipulation for unpacking at a shipment's destination.

IV. METHODOLOGY

A. GENERAL APPROACH

This thesis is supported by three types of research methodology.

1. Archival Research

Archival research which was conducted by reviewing literature on this subject and gathering pertinent materials from multiple sources as noted in the bibliography. The search did not reveal any study similar in nature to this thesis topic.

2. Qualitative Research

Qualitative research which was conducted through a series of informal telephone and personal interviews with sources from government agencies and the private sector. Most of the individuals who were contacted and provided information for this thesis are cited in the list of references. Responses from members of the private sector were discussed in Chapter III.

3. Quantitative Research

Quantitative research which was conducted through a survey of Naval Officers attending the Naval Postgraduate School in Monterey, California. In February 1991, one thousand three hundred and eighty three (1383) questionnaires were

distributed via the student mail center to all United States Navy personnel attached to NPS in a student status. (This survey of convenience will be discussed in detail in this chapter.) Five hundred and fifty nine (559) completed questionnaires or forty (40) percent of the questionnaires were returned to the author. These were analyzed using personal computer software. The statistical results were then evaluated for each question. These results are presented in Section B of Chapter V.

B. SURVEY RESEARCH

A survey was developed to test the hypothesis that most service members do not use the unpacking services offered by the existing Household Goods Contract.

1. Sample Subjects

The subjects of this study were Navy Officers attached to the Naval Postgraduate School in a student status. This "sample of convenience" was selected because it provided a demarcated group which was easily accessible to the author and from which responses could be quantified.

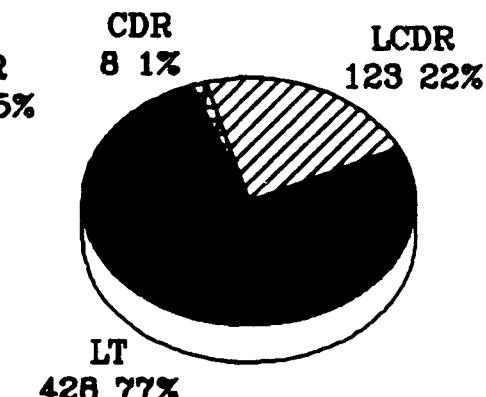
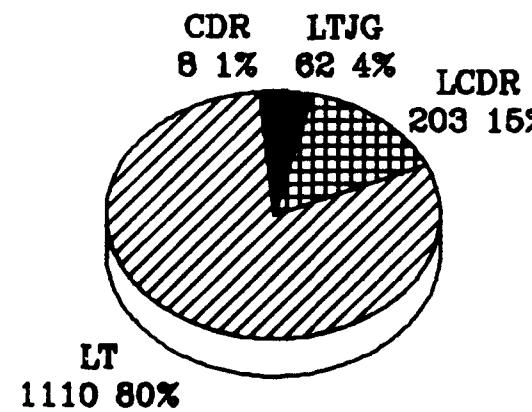
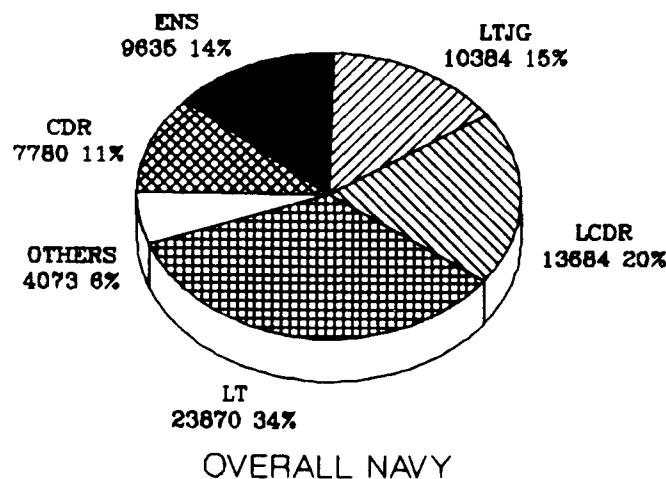
The five hundred fifty nine (559) respondents averaged nine years of active duty service (excluding Academy time). The majority are presently at the rank of "lieutenant" (03), married with children and, while in the Navy, have made

married with children and, while in the Navy, have made approximately five moves at government expense. Although the survey was distributed to all Navy students at NPS, it should be noted that, for no discernable reason, responses were not received from any officers at the rank of "lieutenant junior grade" (02). For purposes of comparison, numbers associated with the overall Navy population were excerpted from a Defense Equal Opportunity Management Institute publication. [Ref. 30] The comparison between the sample and the overall population are provided by Figure 4.1 (see also Table 5.1 which appears in Chapter V).

Figure 4.1

COMPARISON OF RANK DISTRIBUTION

Number of Officers per Pay Grade



2. Questionnaire

Respondents answered a 13-item questionnaire, the design of which was based on information gathered from several interviews with the local Transportation Office, as well as the Military Traffic Management Command. The questionnaire was structured with assistance from the author's Co-Advisor, Professor Nancy Roberts.

The questions were designed to extract brief information about demographics and amount of household goods shipped, as well as specific data about respondents' previous experiences regarding PCS moves and utilization of unpacking services.

Three questions (#s 1, 2, and 3) were asked to establish demographics of the survey population. Four questions (#s 4, 5, 12, and 13) were asked to explore past moving history of survey respondents. Four questions (#s 6, 7, 8, and 10) were asked to determine respondents' unpacking preferences. Two questions (#s 9 and 11) were asked to obtain information related to the motor carriers and moving personnel.

The key question is #6 which focuses on the central issue of this thesis: to what extent are unpacking services utilized? The other questions were developed as predictors.

3. Procedures

The questionnaire was mailed to 1,383 Navy students via the Student Mail Center at the Naval Postgraduate School. The respondents received a short note, which explained the purpose of the study through a cover memorandum attached to the questionnaire. Both are presented on the following pages. Elaborate instruction were not necessary due to the self-explanatory nature of the questions.

It was requested that the questionnaire be completed and returned to the author within one week. However, two weeks were actually allowed before results were tabulated. A total of 574 questionnaires were returned but 15 were either incomplete, illegible, or contained irrelevant information (and were therefore eliminated). 559 completed questionnaires were computer-collated with the use of "Quattro" spreadsheet software. [Ref. 31] Chapter V presents the results from the sample questionnaire.

TO BE COMPLETED BY USN PERSONNEL ONLY.

PLEASE RETURN COMPLETED QUESTIONNAIRE TO SMC 1960. THANK YOU

From: M.T. Gardner-Brown, Administrative Sciences
To: Navy Officers at USN Postgraduate School
Subj: THESIS RESEARCH
Encl: Questionnaire

DEAR FELLOW STUDENTS:

800 RESPONSES are required for a satisfactory compilation of data for research of my thesis.

The subject pertains to PCS moves - in particular: unpacking of household goods. I am exploring the possibility of a DOD contract modification which could result in substantial savings to the government and better service to us military.

Your completion, and the return by next week, of this questionnaire would be sincerely appreciated.

Very respectfully,

M.T. Gardner-Brown
LT, SC, USN

1. Grade/Rank []
2. Years active duty service (excluding academy time)? []
3. Married no children []
Married w/ children []
Single []
Single parent []
4. In the Navy, how many moves have you made at government expense? []
5. Over the course of military moves, how many times did the pre-move counselor ask if you wanted your shipment unpacked at its destination? Please circle appropriate number.

Never 0 1 2 3 4 5 6 7 8 9 10 11 or More

6. Aside from general set-up of furniture & appliances, to what extent do you have the movers unpack boxes of household goods?

Never 0 1 2 3 4 5 6 7 8 9 10 Completely

7. If movers unpacked your boxes, to what extent do they unpack?

Not at all 0 1 2 3 4 5 6 7 8 9 10 Completely

8. Could you make the decision NOW with your pre-move counselor about unpacking at your next duty station?
(Please circle) Yes No Don't know

9. Historically, to what extent do movers offer to unpack, even when unpacking services were not specifically requested? (Please circle)
Never Occasionally Frequently Consistently Always

10. If you never utilize unpacking services, why do you prefer to unpack?

I prefer to unpack: I take more care
 I want the movers out of the house
 I might not catch what is damaged
 My belongings are too valuable

Other _____

11. Does the government pay carriers to unpack all boxes, even if the service is not used? Yes No Don't know
12. How would you grade your last move? (Please circle)
Terrible Poor Fair Good Excellent
13. Total poundage of last shipment: []

V. RESULTS

This chapter discusses the results obtained from the 13-point questionnaire. In Section A, the focus of each question is stated and the responses are tabulated. In section B, a correlation matrix is shown and findings are discussed. Conclusions drawn from questionnaire data and correlation matrix results are presented in Section C.

A. QUESTIONNAIRE DATA

1. Question #1: Respondents were asked to identify themselves by grade/rank. Percentages of respondents were then compared against the overall Navy student population at the Naval Postgraduate School and the Navy population, at large, as discussed above (in Chapter IV). Table 5.1 and Figure 4.1 give a comparison of rank distribution.

Table 5.1 RANK DISTRIBUTION

	<u>LTJG (02)</u>	<u>LT (03)</u>	<u>LCDR (04)</u>	<u>CDR (05)</u>
% respondents:	0.00	78.50	21.00	0.50
% student pop:	4.48	80.26	14.68	0.58
% overall Navy:	14.91	34.38	19.71	11.21

2. Question #2: Respondents were asked the length of time they have served on active duty in the Navy. The mean in years is 9.07 with a standard deviation of 3.56. Figure 5.1 shows survey respondents' years of active duty.

3. Question #3: This question regarding marital status was asked to determine if a specific demographic group predominantly used unpacking services. A breakdown of the respondents' marital status is shown in Table 5.2 with a graphical representation of the respondents' marital status depicted in Figure 5.2.

Table 5.2 MARITAL STATUS OF RESPONDENTS

<u>MARITAL STATUS</u>	<u>NUMBER</u>	<u>% TOTAL RESPONSES</u>
Married, no children	127	22.72
Married, children	303	54.20
Single	121	21.65
Single parent	8	1.43

Figure 5.1

SURVEY RESPONDENTS' YEARS OF ACTIVE DUTY

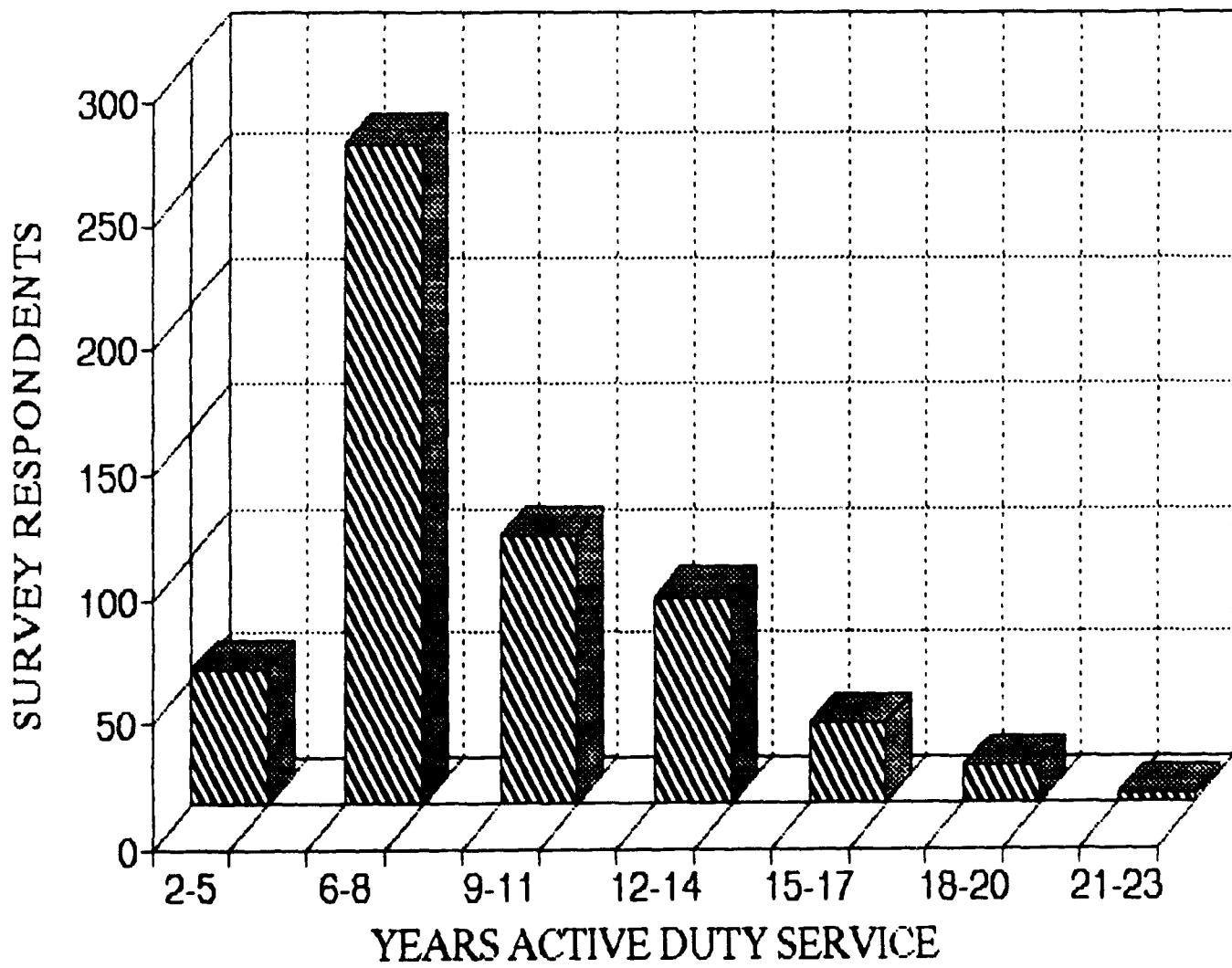
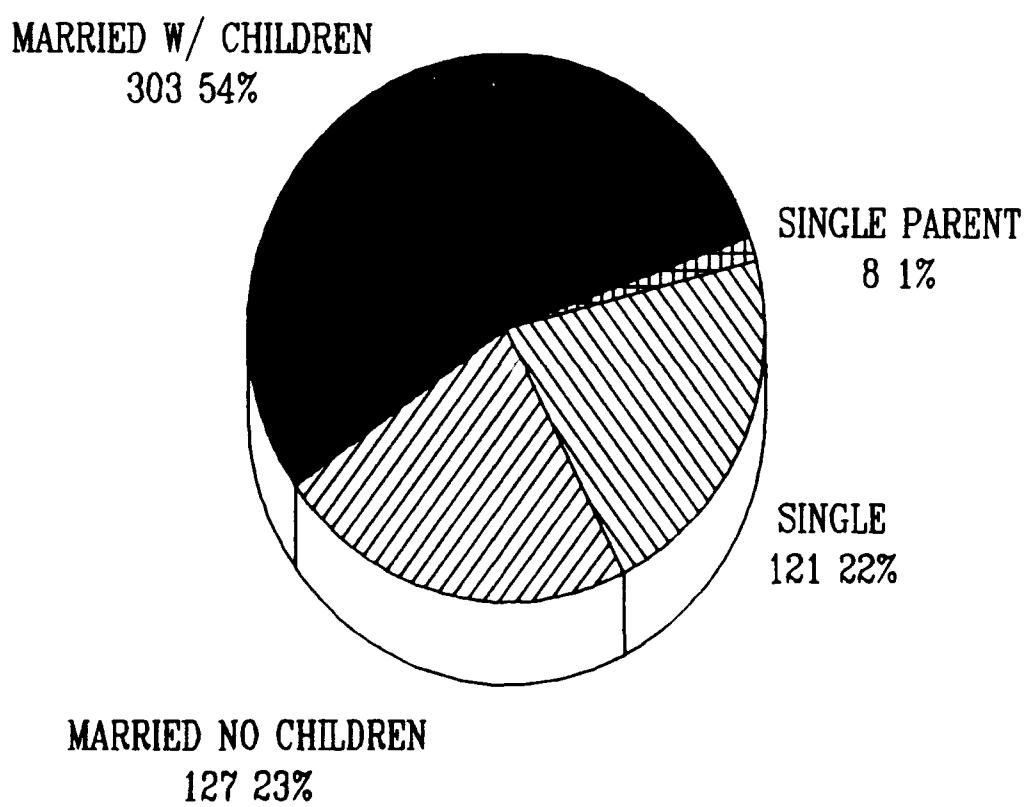


Figure 5.2

MARITAL STATUS of RESPONDENTS



4. Question #4: The histogram showing the number of moves made at government expense for the sample population is presented in Figure 5.3. The mean is 4.75 and the standard deviation is 2.44.

5. Question #5: Respondents were asked for information from their pre-move counseling session about the number of times (over the course of their military moves) they were asked if they wanted to utilize unpacking services at shipment destination. Answers were based on a scale from 0 to 11 or more, with zero obviously meaning "never". Figure 5.4 provides the histogram for the responses to this question. The mean was 1.46 times, and the standard deviation was 2.21 times.

Figure 5.3

SURVEY RESPONDENTS' MOVES AT GOVERNMENT EXPENSE

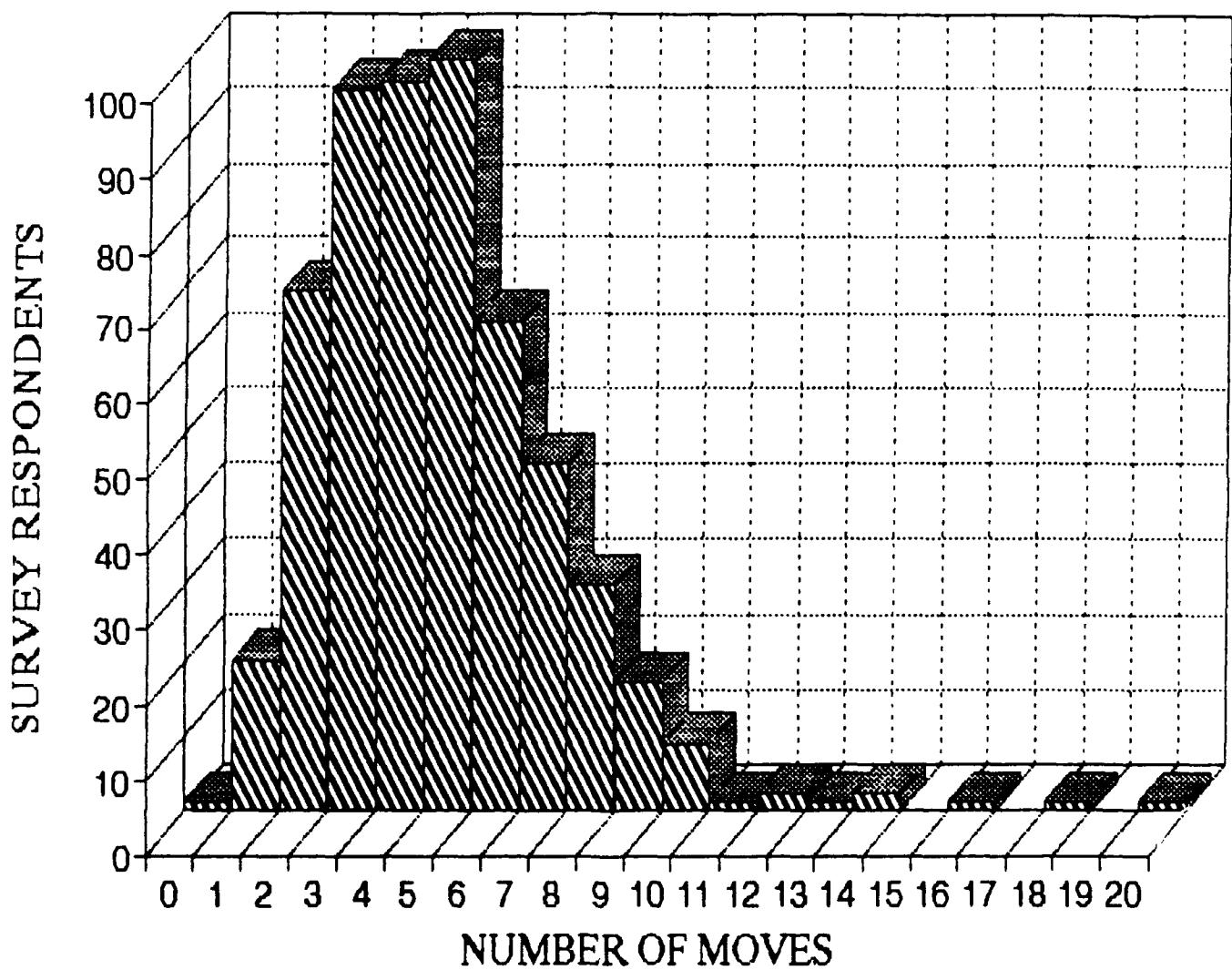
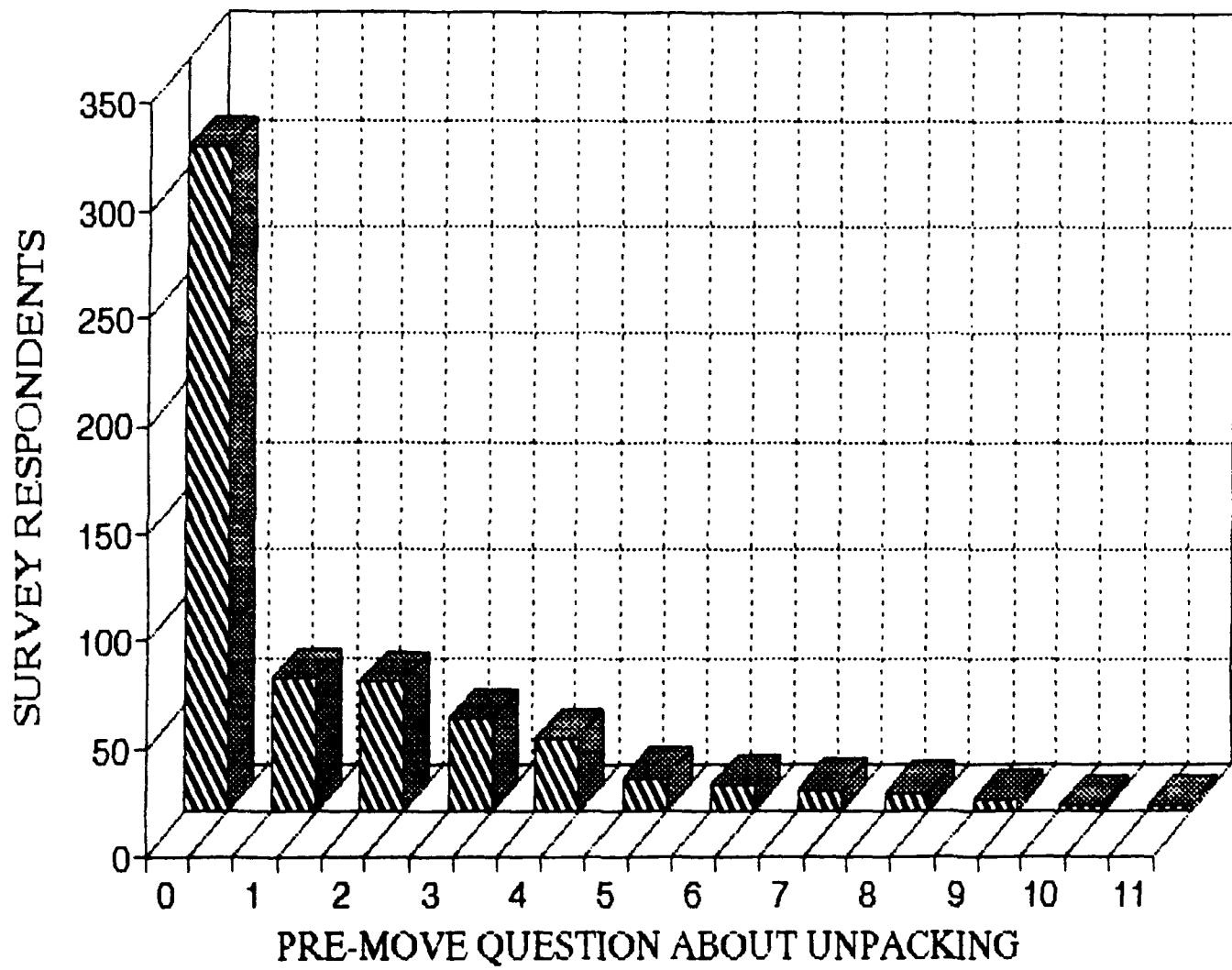


Figure 5.4

FREQUENCY OF PRE-MOVE QUESTION ABOUT UNPACKING AT DESTINATION

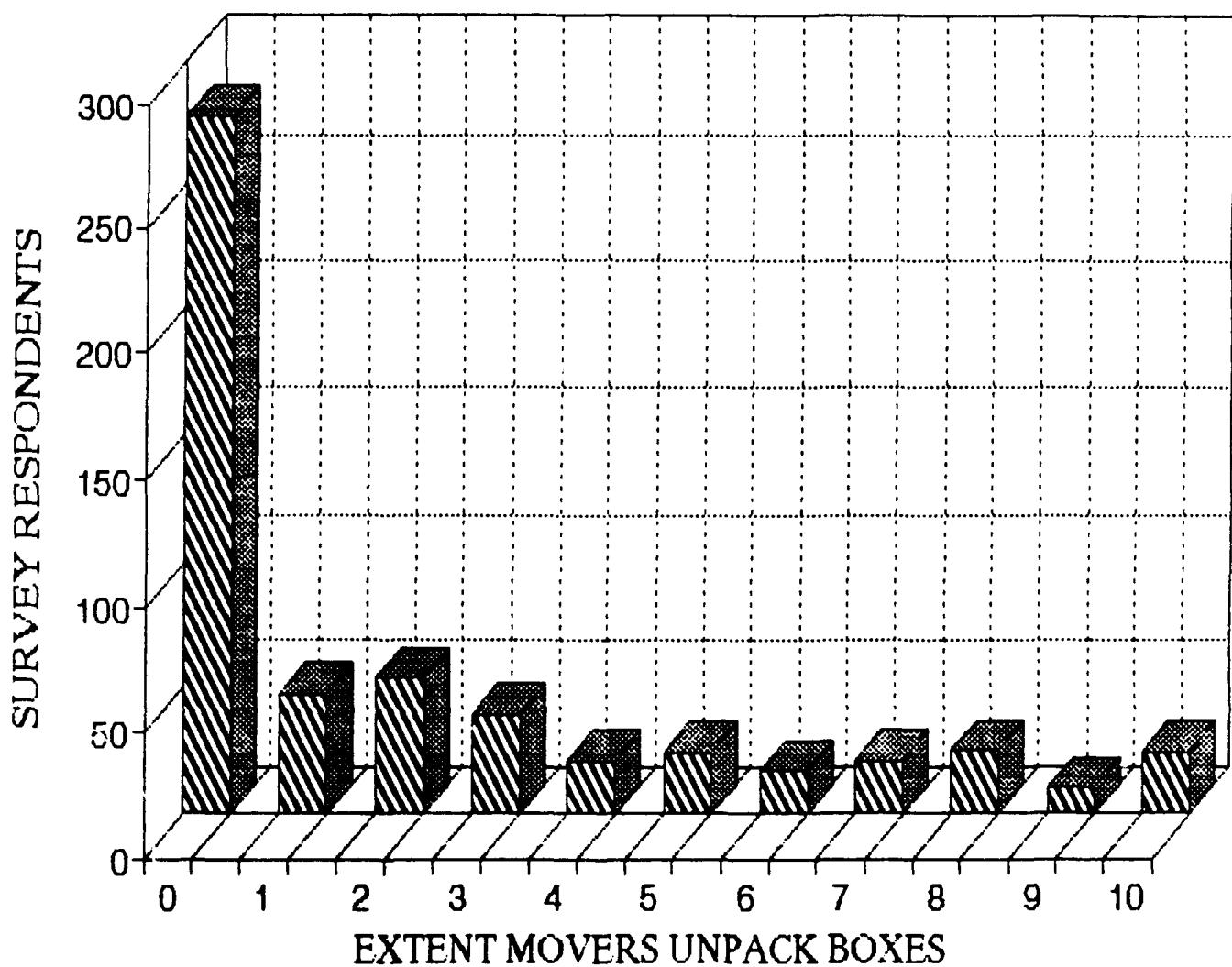


6. Question #6: Respondents were asked to what extent they wanted the movers to unpack their boxes of household goods. Answers were based on a scale from 0 to 10, with zero correlating to "never" and ten correlating to "completely" or 100 percent. The histogram of responses is shown in Figure 5.5. The mean is 2.25 (or 22.5%) and the standard deviation is 3.04.

7. Question #7: Respondents who utilized unpacking services were asked to determine the extent to which the movers actually unpacked the boxes in their shipment of household goods. Answers were based on a scale from 0 to 10, or 0 to 100%, with zero correlating to "not at all" and ten (100%) correlating to "completely". The mean is 27.6% and the standard deviation is 36.4%. After response data was analyzed, the author and his thesis advisors determined that there may have been confusion between Questions 6 and 7 on the part of the respondents. Consequently Question #7 was eliminated from further analysis.

Figure 5.5

EXTENT OF UNPACKING SERVICES UTILIZED BY SURVEY RESPONDENTS



8. Question #8: Respondents were asked if they could make a decision (at their present duty station) about their unpacking needs at their next duty station. The answers were phrased either: yes, no, or don't know.

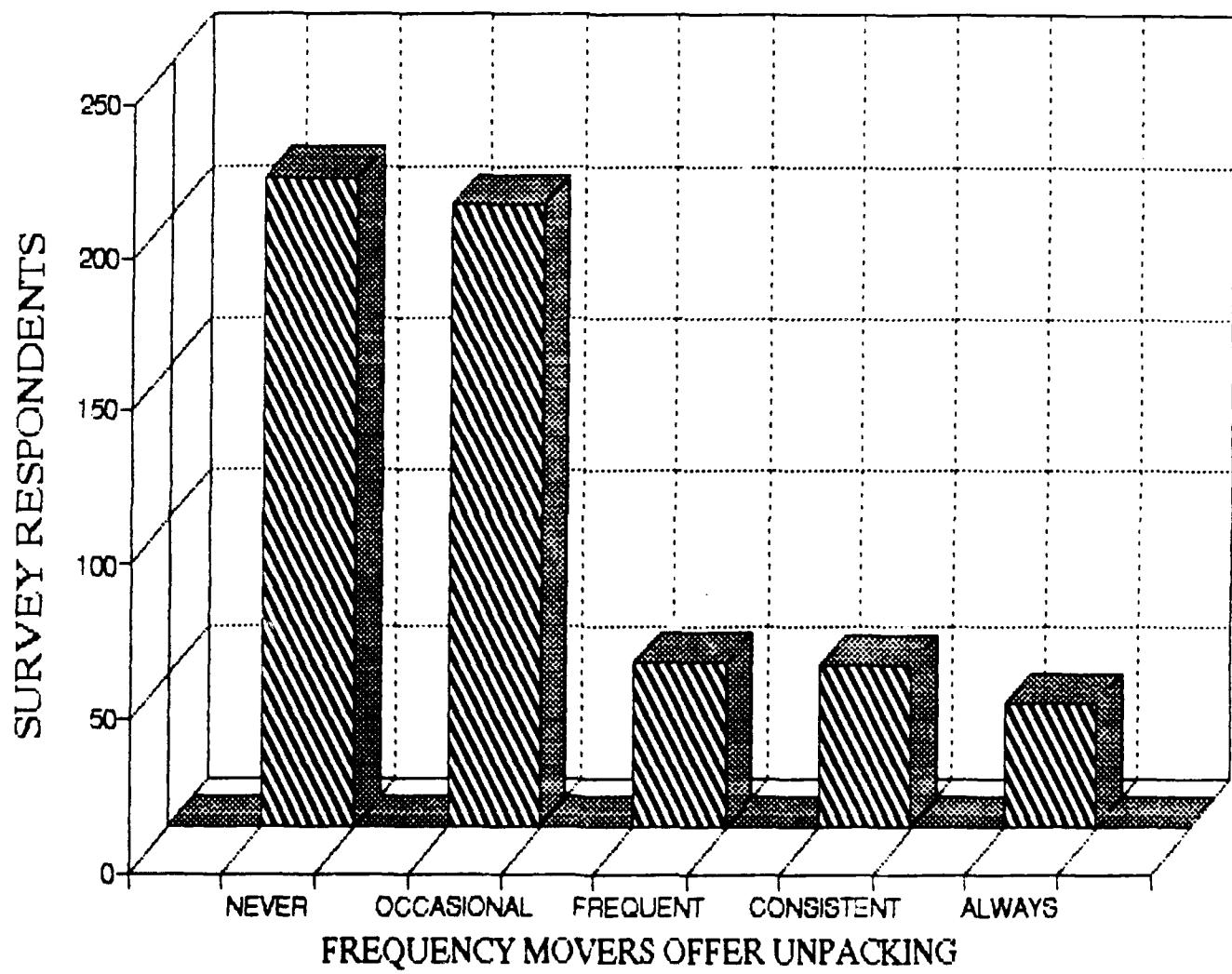
Table 5.3 PRE-MOVE DECISION ABOUT UNPACKING

<u>ANSWER</u>	<u>% OF RESPONDENTS</u>
YES	80.00
NO	18.64
DON'T KNOW	0.36

9. Question #9: Respondents were asked to establish how many times the movers volunteered to unpack household goods, even when unpacking services were not specifically requested. The choice of answers were phrased either: never, occasionally, frequently, consistently, always. The number correlation was assigned as follows: never = 1, occasionally = 2, frequently = 3, consistently = 4, always = 5. The histogram of responses is shown in Figure 5.6. The mean is 2.16 and the standard deviation is 1.22.

Figure 5.6

FREQUENCY OF MOVING COMPANY OFFERING TO UNPACK



10. Question #10: Respondents who never utilize unpacking services were asked to select the primary reason they do not utilize this service. The choices and responses were:

I take more care = 39.0 %

I want the movers out of the house = 14.0 %

I might not catch what is damaged = 10.5 %

My belongings are too valuable = 1.6 %

Other = 30.3 %

Of those citing a reason for marking the "other" category, there were two explanations given:

- did not know immediately where to put belongings;
- wanted to unpack slowly.

11. Question #11: Respondents were asked if they were aware that the government pays for unpacking services, even if the service is not utilized. This question was asked because the author wanted to determine if it was common knowledge that movers are paid to unpack, regardless of utilization. The answers were phrased either: yes, no, or don't know.

Table 5.4 KNOWLEDGE ABOUT PAID UNPACKING

<u>ANSWER</u>	<u>% OF RESPONDENTS</u>
YES	68.00
NO	11.00
DON'T KNOW	21.00

12. Question #12: Respondents were asked to rate their level of satisfaction with their last government-sponsored moving experience. Answers were phrased either: terrible, poor, fair, good, excellent. The number correlation was assigned as follows: terrible = 1, poor = 2, fair = 3, good = 4, excellent = 5. The histogram of responses is shown in Figure 5.7. The mean is 3.33 (or slightly better than "fair"), and the standard deviation is 1.11.

13. Question #13: This question was asked to ascertain the distribution of weight of the respondents' household goods shipments, moved at government expense to the Naval Postgraduate School. Figure 5.8 shows the histogram of responses. The mean is 7,708 lbs; the standard deviation is 3,662 lbs.

Figure 5.7

SURVEY RESPONDENTS' SATISFACTION WITH LAST MOVE

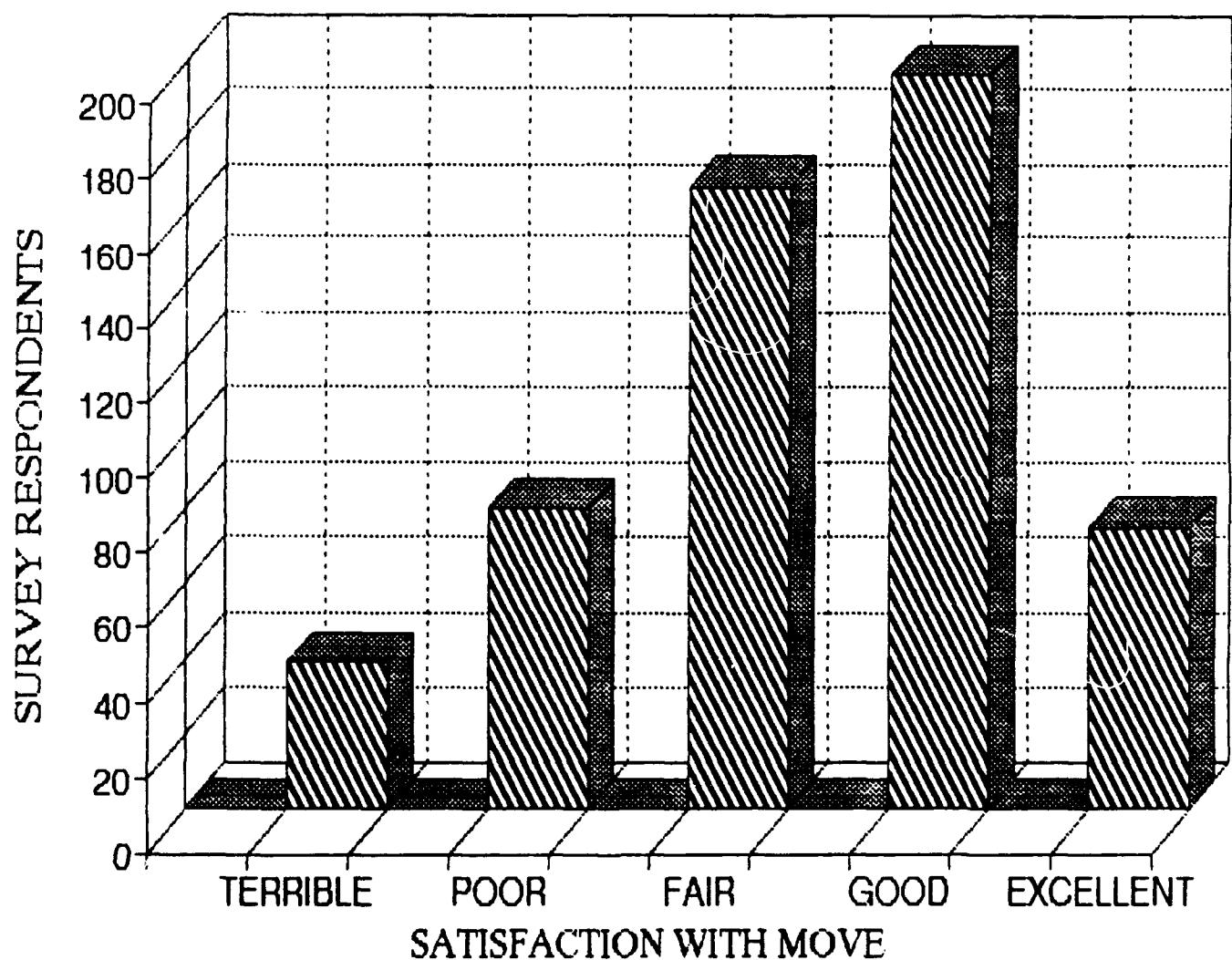
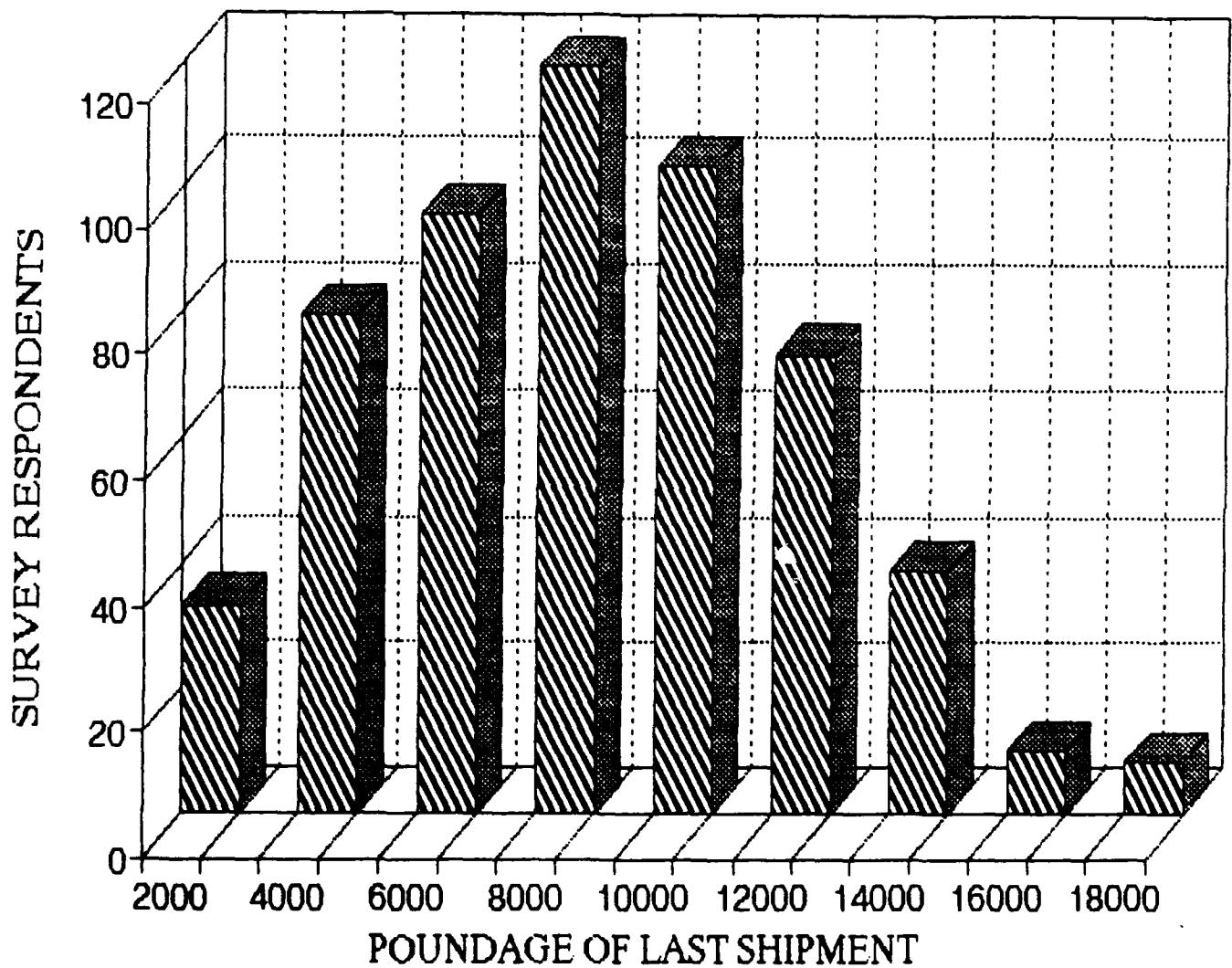


Figure 5.8

SURVEY RESPONDENTS' POUNDAGE OF LAST SHIPMENT



B. STATISTICAL ANALYSIS

This section attempts to establish if a particular group within the sample population is more inclined to utilize (or not utilize) unpacking services.

In determining if there is a significant relationship between any of the survey questions, the author used "Minitab" computer software to compile a correlation matrix. [Ref. 32] Table 5.5 displays the correlation matrix based on the total data gathered from the survey conducted for this thesis.

Table 5.5 CORRELATION MATRIX: SURVEY QUESTIONS 1-13

	Q1	Q2	Q3	Q4	Q5	Q6
Q2	0.598					
Q3	-0.032	-0.003				
Q4	0.383	0.558	-0.040			
Q5	0.081	0.168	-0.070	0.294		
Q6	-0.019	-0.001	-0.019	0.031	0.097	
Q7	-0.001	0.007	-0.028	0.025	0.106	0.812
Q8	-0.061	0.024	0.075	-0.021	-0.053	-0.074
Q9	0.010	0.016	-0.016	-0.054	0.167	0.142
Q10	0.037	0.025	0.029	0.010	-0.031	0.063
Q11	0.007	0.006	0.097	-0.017	-0.057	-0.092
Q12	-0.033	-0.059	-0.008	-0.023	0.118	0.083
Q13	0.338	0.422	-0.163	0.348	0.096	-0.064
	Q7	Q8	Q9	Q10	Q11	Q12
Q8	-0.006					
Q9	0.179	-0.036				
Q10	0.067	-0.071	0.063			
Q11	-0.090	0.075	0.042	0.068		
Q12	0.158	-0.065	0.191	0.050	-0.001	
Q13	-0.073	-0.098	-0.044	0.023	-0.042	-0.053

For ease in interpreting the correlation matrix shown in Table 5.5, a brief synopsis of the survey questions follows.

- 1) Rank
- 2) Years Service
- 3) Marital Status
- 4) Number of Moves
- 5) Pre-move Questions about Unpacking
- 6) Frequency Unpacking Utilized
- 7) If Unpacking Utilized, What Extent
- 8) Pre-Move Decision about Unpacking
- 9) Moving Company Offers to Unpack
- 10) Reasons for Unpacking Oneself
- 11) Knowledge about Payment for Unpacking
- 12) Satisfaction with Last Move
- 13) Poundage of Last Move

In the (Pearson) correlation matrix, the "linear correlation coefficient" is denoted by "r" and is produced from the following formula.

$$r = \frac{n \sum xy - (\sum x)(\sum y)}{\sqrt{n(\sum x^2) - (\sum x)^2} \sqrt{n(\sum y^2) - (\sum y)^2}}$$

This coefficient measures the strength of the relationship between the paired "x" and "y" values in this sample. The "r" value must always fall between -1 and +1 inclusive. A strong positive linear correlation between x and y is reflected by a value of r near +1, while a strong negative linear correlation is indicated by a value of r near -1. If r is close to 0, we can conclude that there is no significant linear correlation between x and y. [Ref. 33]

To establish which values of r are significant, the (Fisher Z Transformation) test was run with a null hypothesis of zero and an alternative hypothesis not equal to zero. The null hypothesis is tested directly in the sense that the final conclusion will be either rejection of the null hypothesis or failure to reject the null hypothesis; the alternative hypothesis is the statement that must be true if the null hypothesis is false. [Ref. 34]

To simplify the test of the null hypothesis, the Fisher Z Transformation [Ref. 35] was used because the transformed test statistic has a normal distribution with n = sample size. Furthermore with a second transformation, z will have a normal distribution with a mean of 0 and a variance of 1. The formula for z is:

$$z = \frac{\sqrt{n-3}}{2} \ln \frac{1-r}{1-r} = \sqrt{n-3} z.$$

For $n = 559$, this formula becomes

$$z = \sqrt{559-3} z = 23.58 z.$$

At the 5% level of significance, assuming a bivariate normal distribution of the responses between pairs of questions, the test statistic is:

$$z_{\alpha/2} = 1.96,$$

and, at the 1% level of significance, the test statistic is:

$$z_{\alpha/2} = 2.575.$$

To find the critical value, in terms of r , associated with each level of significance we solved the formula for "z" to find "Z". Z is replaced by the test statistic.

When

$$z_{\frac{\alpha}{2}} = 1.96 ,$$

we get

$$z = \frac{1.96}{23.58} = 0.0831 ;$$

and, when

$$z_{\frac{\alpha}{2}} = 2.575 ,$$

we get

$$z = \frac{2.575}{23.58} = 0.1092 .$$

The first formula above for "z" shows it to be a function of "r". We denoted that function by "Z". Solving for "r" from knowing "Z":

$$z = \frac{1}{2} \ln \frac{1+r}{1-r} \Rightarrow 2z = \ln \left(\frac{1+r}{1-r} \right) .$$

Taking antilogs,

$$e^{2z} = \frac{1+r}{1-r} .$$

Then, for the critical "Z" values, we get

$$Z = 0.1092 ; \quad e^{2Z} = e^{0.2184} = 1.244 ,$$

$$Z = 0.0831 ; \quad e^{2Z} = e^{0.1662} = 1.181 .$$

Next, we use

$$e^{2Z} = \frac{1+r}{1-r}$$

to solve for "r": The result is

$$r = \frac{e^{2Z} - 1}{e^{2Z} + 1} .$$

Therefore, for a 1% significance level:

$$r = \frac{1.244 - 1}{1.244 + 1} = 0.1087 ;$$

and, for a 5% significance level:

$$r = \frac{1.181 - 1}{1.181 + 1} = 0.083 .$$

Thus, we reject the null hypothesis at the 5% level if $|r| > 0.083$. We reject the null hypothesis at the 1% level if $|r| > 0.1087$. With a sample size of 559, a significance level of 1% was used.

The $|r| > 0.1087$ indicates that any correlation coefficient with a value greater than 0.1087 will be statistically significant. Table 5.6 displays all correlations that proved to have significance. Each of these will be addressed in order of magnitude of the correlation coefficient.

Table 5.6 SIGNIFICANT CORRELATIONS BETWEEN QUESTIONS

<u>SURVEY QUESTIONS</u>	<u>CORRELATION COEFFICIENTS</u>
6 - 7	0.812
1 - 2	0.598
2 - 4	0.558
2 - 13	0.422
1 - 4	0.383
4 - 13	0.348
1 - 13	0.338
4 - 5	0.294
9 - 12	0.191
2 - 5	0.168
5 - 9	0.167
3 - 13	0.163
6 - 9	0.142
5 - 12	0.118

C. DISCUSSION OF STATISTICAL CORRELATIONS

Questions 6-7 (frequency and extent of using unpacking services) have a correlation coefficient of 0.812 which indicates a strong positive correlation. The intent in question 7 was establishing to what extent respondents had the movers unpack boxes of HHG. This questions should have been answered only if question 6 was answered with any number greater than zero. On reviewing hard-copy questionnaire returns, it became apparent that question 7 was not being answered in such a manner. It can be assumed that respondents did not fully understand that particular question. Question 7 will, therefore, be eliminated from any future statistical analysis. That is the reason that correlations between question 7 and questions 9 and 12 were not included in Table 5.6.

Questions 1-2 (rank and years of service) have a correlation coefficient of 0.598 which indicates a strong positive correlation. This was expected since officers are promoted in the Navy on a regimented schedule, based largely on years of active duty service and time in rank. It is of some interest that the degree of correlation is not higher; and may be due, in part, to the large number of prior enlisted personnel who answered the survey. In addition, there is

always a large variation of years of service associated with each rank. The variation for LTs at the Naval Postgraduate School is the largest. It is slightly less for LCDRs and even less for CDRs. However, the differences in this rank variation are due to the fact that the senior population of LCDRs and CDRs are not at NPS. They have returned to the fleet.

Questions 2-4 (years of service and number of moves) have a correlation coefficient of 0.558. This strong positive correlation was expected since "Permanent Change of Station" (PCS) orders normally occur every two to three years.

Questions 2-13 (years of service and poundage of last shipment) have a correlation coefficient of 0.422. This should be expected since most people tend to accumulate more personal property over the years.

Questions 1-4 (rank and number of moves) have a correlation coefficient of 0.383 which was lower than expected. This could be attributed to the number of officers, attending the Naval Postgraduate School, who served as prior enlisted. They had probably made several government sponsored moves during their prior enlistment but, in response to the survey question, they listed the number of moves they had made during their time in service as officers. An additional

consideration is that many military members decide to "homestead", which means that they stay at one location over several tours of duty. Even though their duty station technically changes, they do not require a HHG shipment.

Questions 1-13 and 4-13 (rank and number of moves compared to poundage of last shipment) have close correlation coefficients of 0.348 and 0.338, respectively. These were expected correlations because as personnel are promoted in rank, they tend to accumulate more personal effects. Similarly, as the number of PCS moves increases over a time span, so does rank.

Questions 4-5 (number of moves and pre-move question about unpacking at destination) have a correlation of 0.294. Even though survey data indicates that the question was infrequently asked during the pre-move counseling sessions of this survey's population, it will eventually get asked as the number of moves gets larger. It must be remembered that the majority of people surveyed are lieutenants who have made an average of only five moves.

Questions 9-12 (movers offering to unpack and satisfaction with last move) have a correlation coefficient of 0.191 which indicates a weak correlation between the two variables. The group of respondents stating that satisfaction with their last

move was "fair" experienced only occasional offers from the movers to unpack.

Questions 2-5 (years of service and pre-move question about unpacking at destination) have a weak correlation of 0.168, which may be attributed to the possibility that the longer people remain in the military the greater chance they have of being asked whether or not unpacking services will be required at their destination.

Questions 5-9 (pre-move question about unpacking at destination and movers offering to unpack) have a correlation coefficient of 0.167. The correlation is weak; both variables occur infrequently according to respondents.

Questions 3-13 (marital status and poundage of last shipment) have a correlation coefficient of 0.163. People "married with children" represent the majority of the survey group and would be expected to have a greater accumulation of personal belongings. However, the other groups including "married no children", "single" and "single parents", form 46% of the responding population. They reduced the strength of an expected correlation because the average poundage of their shipments are considerably smaller in weight than the group comprised of "married with children".

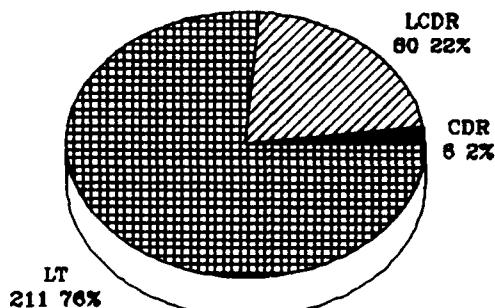
Questions 6-9 (extent unpacked and movers offering to unpack) have a correlation coefficient of 0.142. Survey results showed that 50% of the respondents tended to unpack themselves. Respondents also claimed that, historically, movers generally never offer to unpack (see Figure 5.6).

Questions 5-12 (pre-move question about unpacking at destination and satisfaction with last move) have a weak correlation of 0.118. This may indicate that even though a military member was not questioned about unpacking requirements, he/she still experienced overall satisfaction with his/her previous move.

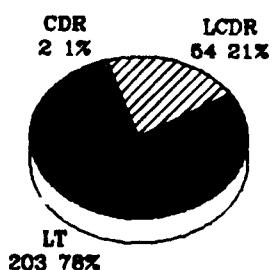
Questions 1-6 (rank and frequency unpacking is utilized) were two areas where the author expected some correlation, although no correlation appeared in the matrix. He felt that more senior personnel would avail themselves of unpacking services provided. Further investigation of raw data showed the LCDRs and CDRs, by percentage, tended to use unpacking services slightly more frequently as shown in Figure 5.9. However, these groups consist of a small population which precludes definitive conclusions about senior personnel utilizing unpacking services more frequently than those in the junior ranks.

Figure 5.9

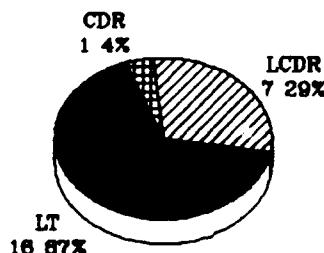
UTILIZATION OF UNPACKING SERVICES
BREAKDOWN BY RANK



NEVER USE UNPACKING SERVICES



OCCASIONALLY USE SERVICES



ALWAYS USE SERVICES

Questions 13-6 (poundage of last move and frequency unpacking is utilized) did not yield any correlation although one was expected. The intent in looking at this pair was to see if a relationship could be drawn between the amount of household goods that people ship and the frequency of utilizing unpacking services. The author felt that people who had larger shipments might be more inclined to make use of professional help with unpacking. This did not prove true.

Questions 6-3 (frequency unpacking is utilized and marital status) were two other areas where some correlation was expected. The author's opinion, based on his personal family experience with PCS moves, was that married respondents with children and single parents might tend to utilize unpacking services on a consistent basis. No evidence of this, however, was found when analyzing the raw data in each marital status category.

D. SUMMARY OF RESULTS

- Out of a population of 1,383 the author received 559 responses.
- 277 respondents (50%) never utilize unpacking services.
- 258 respondents (46%) occasionally use partial unpacking services, but only for certain areas of the house.
- 24 respondents (4%) always utilize unpacking services.
- No particular group, based on survey demographics, could be identified as one which always uses or never uses unpacking services.
- 80% of respondents said that they could make a decision (at the pre-move counseling session) about unpacking requirements at their destination.
- 55% of respondents have never been asked, during their pre-move counseling session, if they wanted unpacking services at the shipment destination.
- The majority was satisfied with the outcome of their last PCS move, despite the fact that most of these respondents did not use unpacking services.
- It can be concluded that availability and utilization of professional unpacking services are not critical elements in military members satisfaction with their moves.

VI. COST-SAVINGS PROPOSALS

Based on the statistical analysis of the survey responses, data from MTMC's financial reports, and opinions from members of the motor carrier industry, the author would like to propose two alternative methods of contracting a "Tender of Service" for Packing/Unpacking a Department of Defense HHG shipment. It is the author's belief that each of these proposals has the potential to reduce shipping related costs to the government without compromising customer satisfaction with the moving process. The determination of the expected cost savings of each is the subject of this chapter. The next section provides data and cost estimates which will be common to each proposal. Section B describes the first alternative and Section C describes the second alternative of the cost-savings proposals.

A. PRELIMINARY COST ANALYSIS

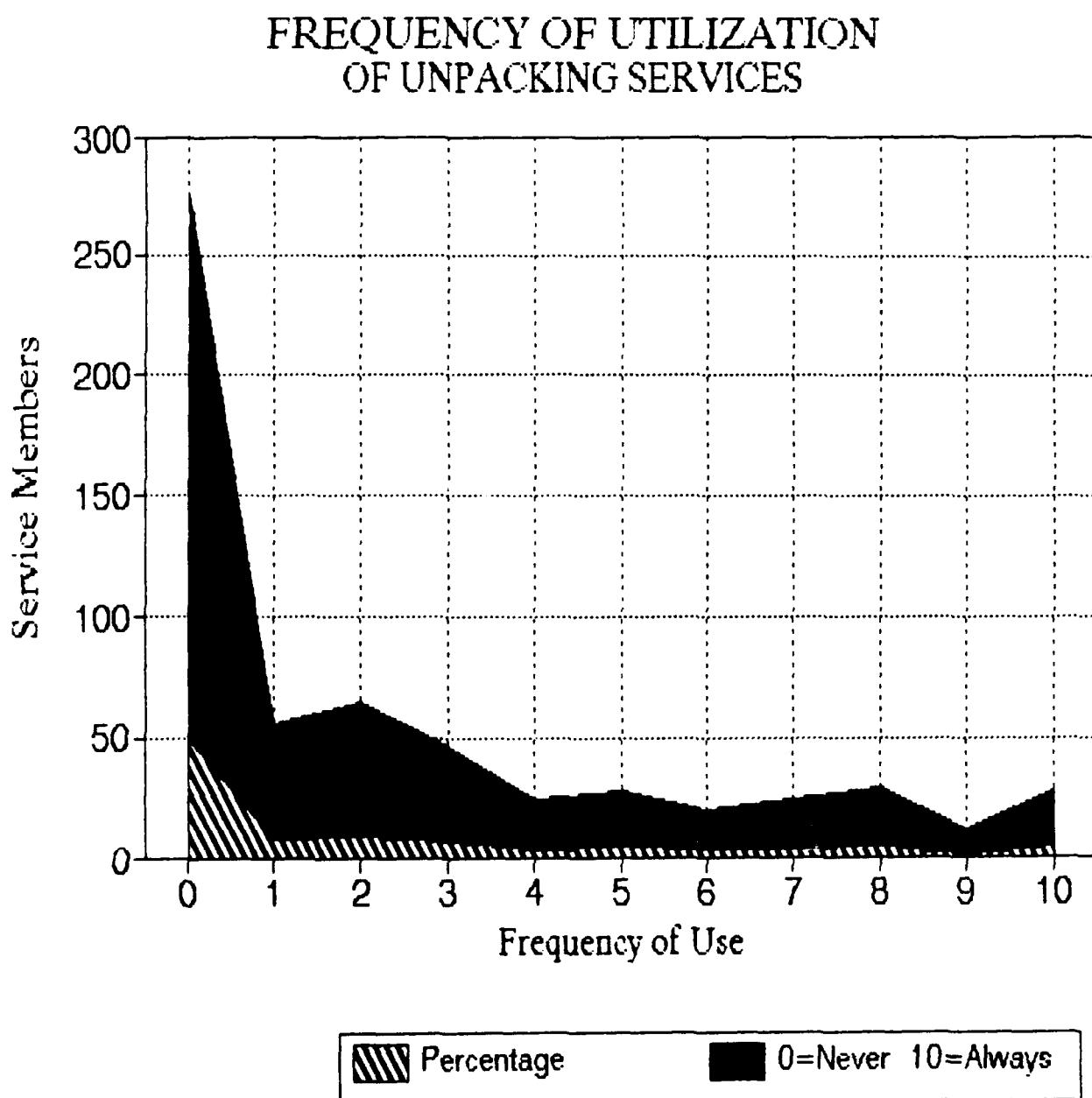
As the survey indicates, 50 percent of NPS students never utilize the unpacking services offered as part of the military moving process. 46 percent of those surveyed use unpacking services for limited portions of their shipments. Only 4

percent of the survey population consistently use unpacking services paid for by the United States government in connection with their military move. The "frequency of utilization of unpacking services" is depicted in Figure 6.1.

As the author's survey results show, the average weight of a HHG shipment coming to the Naval Postgraduate School was 7,708 lbs. The total number of Navy shipments inbound to NPS for fiscal year 1990 were 1,340. [Ref. 36] The Transportation Office was not able to provide an exact number for outbound Navy shipments because the office also handles Marine Corps and Navy personnel attached to the Defense Language Institute (DLI) at the Presidio in Monterey. The Transportation Office combines the outbound groups, and their existing system is unable to distinguish between DLI and NPS students.

A few facts (excerpted from MTMC's Traffic Management Progress Report) concerning Department of Defense personal property moves are presented to show the amount of monies spent overall in fiscal year 1990 for household goods shipments. [Ref. 37]

Figure 6.1



- DOD shipments for 1990 totaled 803,383.
- Navy shipments for 1990 totaled 151,461.
- The cost of these Navy shipments totaled \$204,909,615.
- Average cost for a Navy shipment (per CWT) including packing/loading, transporting, unpacking/unloading was \$42.56.
- Average cost per CWT for the packing/loading and unloading/unpacking part of a Navy shipment (transportation is a separate tariff) in the Monterey, California geographical zone[Ref. 38] was \$15.35.

Based on the 7,708 lbs average weight of inbound shipments to the Naval Postgraduate School, the estimated average cost for packing/loading and unloading/unpacking these 1,340 shipments is:

$$\text{Cost} = 1340 \times 77.08 \times 15.35 = \$1,585,458.$$

If we assume that, because agents say these accessorial charges could be reduced by 2% to 5% if unpacking was eliminated, the unpacking portion of the costs associated with the 1340 shipments inbound to NPS is assumed to be somewhere between \$31,709 and \$79,272.

B. FIRST ALTERNATIVE

The author proposes, as the first alternative, that the existing HHG moving contract be modified in such a way that "unpacking at destination" becomes an accessorial option (separately charged at the government approved hourly rate for the local area) requested or declined by the military member. To facilitate the proposed change, a firm decision from the member who is being advised about his/her move would be required at the pre-move counseling session.

It should be noted that in this alternative the author is not proposing total elimination of unpacking services but, instead, a method whereby the government will not be charged for the unpacking portion of a move if the service member decides he/she does not want the shipment to be unpacked by the moving company.

If the service is declined at the point of origin, the agent would be expected to reduce the rate of billing of the packing/loading/unloading/unpacking portion anywhere from 2 to 5 percent, based on the author's interviews with local agents. The exact amount would have to be negotiated and then specified in the contract.

would start the time-clock for manhour charges related to unpacking.

The survey conducted for this thesis showed that 4% of the sample population always uses unpacking services and 46% occasionally uses unpacking services for some percentage of the shipment. These two groups represent a total of 282 respondents. The mean usage for these 282 people was 4.450 (44.5%) with a standard deviation of 2.932 (29.32%) (Minitab calculation). This author's proposal of paying an hourly labor rate to the agent who is providing accessorial services to the military member will still amount to less than what would be expected to be paid under the current system (which is between \$31,709 and \$79,272 just for the Naval Postgraduate School sample population).

The costs for these 282 people, under the proposed system, would be:

282 people (50% of the population that uses unpacking services to some extent)

(x) 27.85 (hourly labor rate for the Monterey area)

(x) 8 man-hours (estimated average time for unpacking)

(x) .445 (mean fraction of unpacking for people who always or occasionally use unpacking services)

= \$27,645.

C. SECOND ALTERNATIVE

The author proposes, as the second alternative, that the existing household goods moving contract be modified to completely eliminate unpacking services. The survey undertaken for this thesis shows that 50% of the sample population did not have the moving company unpack any portion of their shipments. This group represents a total of 277 respondents. For the Naval Postgraduate School, alone, the savings for this group could amount to between \$6,554 and \$16,387 annually. These cost savings were computed as follows:

277 people (population that never uses unpacking services)

(x) 7,708 lbs (average weight of shipments)

(x) \$15.35 / 100 lbs (cost for packing/unpacking per cwt)

(x) .02 (rate reduction at the 2% level for not unpacking)

= \$6,554

or

(x) .05 (rate reduction at the 5% level for not unpacking)

= \$16,387

A more wide-spread survey might establish that the 50% found at NPS is the same or even larger in the Department of Defense population at large. By eliminating a personal property movement service used less than 50% of the time, a substantial savings to the government can be expected.

151,461 government sponsored moves, for the Navy alone, were handled during 1990. Since this thesis' survey was conducted in a population comprised only of officers, the Navy's savings calculations should be adjusted accordingly. With roughly a 8:1 [Ref. 39] ratio of enlisted and officers, the following calculation can be made (to show the extent of savings that may be possible just within the officer corps):

$$151,461 / 8 \times 7708 \times (15.35 / 100) \times .02 = \$448,013; \\ \times .05 = \$1,120,033.$$

An important issue, which needs to be considered by decision makers who might consider approving implementation of this cost-savings alternative, is that accessorial services provided within the framework of PCS personal property moves are considered as "benefits" offered to DOD employees. In a telephone conversation [Ref. 40] with the Director of MTMC's Western Area Transportation Office, she was quick to mention that this proposal would actually take away a service member's benefit, something to which Congress may not be amenable.

VII. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A. SUMMARY

This thesis first provided the reader with an overview of the present Department of Defense Household Goods Personal Property Movement System, as well as historical information about the Military Traffic Management Command. The thesis then focuses on one particular area within the current system of personal property movement: utilization (by DOD employees) of unpacking services which are provided as part of the HHG moving contract. The author selected this subject because he believes that millions of dollars, currently allocated for personal property transportation and accessorial services, are being spent for services often not used by military members. He sought feasible alternatives which would allow household goods shipping expenditures to be reduced.

Through a survey, conducted at the Naval Postgraduate School of a population of 1,383 Navy officers (resulting in 559 responses), the author discovered that half of those responding to the survey never use unpacking services provided by the moving company and paid for by the government under the

current system. He attempted to prove that cost-savings are attainable within the present system of contracting shipments. Two alternatives are proposed that have the potential to yield substantial dollar savings to the government.

B. CONCLUSIONS

From the research studies and statistical analyses done, several important conclusions are drawn.

1. Motor carriers hire local agents to pack, load, unload and unpack shipments. In speaking with a group of these agents, it was revealed that unpacking may represent 2% to 5% of the amount paid to the agents by motor carriers for all the accessorial services aforementioned. Based on the 7,708 lbs average weight of inbound shipments to the Naval Postgraduate School, the estimated cost for the accessorial services associated with these 1,340 (survey sample) shipments is \$1,585,458. It can, therefore, be deduced that the unpacking portion costs somewhere between \$31,709 (at 2%) and \$79,272 (at 5%). The author concludes that if unpacking is totally eliminated from the moving contract, the government could achieve a substantial dollar savings as calculated on page 73.

2. The shipping charges and accessorial services are paid all inclusively, despite the fact that certain services are often not used. The author's survey, conducted at the Naval Postgraduate School, found that 50% of this survey's responding population did not use any professional unpacking services and, in fact, have never utilized unpacking services during their previous moves (the average number of which was five). 4% use the service on a consistent basis and 46% occasionally use unpacking services for certain portions of their shipments. Even if the hourly payment option is implemented for those who request unpacking services, the author concludes the hourly unpacking rates will still amount to less than what is currently paid as calculated on page 72.

3. Survey respondents, in general, were satisfied with the outcome of their last PCS move, even though most of them chose to unpack themselves. This leads the author to conclude that availability and utilization of professional unpacking services are not critical elements in military members' satisfaction with their moves.

4. No particular group in the survey, based on survey demographics, could be identified as one which always uses or never uses unpacking services. The author, therefore, concludes that a larger survey population would be needed to determine if these results are representative of the entire Department of Defense.

5. A large majority (80%) of survey respondents said they could make a decision at their pre-move counseling session about whether or not they would require unpacking services at their shipment destination, but most of them have never been asked this question over the course of their previous government sponsored moves. The author concludes that an area where Transportation Offices throughout CONUS could benefit from a review of procedures, to ensure uniformity, is in the pre-move counseling sessions.

6. The present system of HHG Personal Property Movement is detailed in the Personal Property Traffic Management Regulation (DOD Instruction 4500.34R) and has been in effect for the past twenty years, since 1971, with few changes and periodic updates. The author concludes that a proposal to change the standard operating procedure may not be readily accepted nor implemented.

7. The contractually binding agreement between the shipper (U.S. government) and the carrier is called a "Tender of Service", and motor carriers bid "voluntary" rates which can be any percentage of the established baseline tariff. Since carriers are presently bidding (May 1991) moving contracts at 50 percent of tariff, to attract more business during this period of economic recession, the author concludes that this may not be an opportune time to seek a contract option which would reduce the rate of accessorial services.

C. **RECOMMENDATIONS**

1. **CONDUCT A EXTENSIVE SURVEY THROUGHOUT THE DOD.**

The author recommends that a GAO study be conducted to establish if, in fact, the results from the thesis survey are representative of all branches of the Department of Defense and the ranks of their members.

2. **CONSIDER IMPLEMENTATION OF THE COST-SAVINGS PROPOSALS.**

The author recommends the two alternatives detailed in Chapter VI entitled "Cost-Savings Proposal" be considered as potential areas of savings for the entire Department of Defense.

3. **GATHER SPECIFIC DATA FROM PERSONAL PROPERTY OFFICES.**

The author recommends that all Personal Property Offices begin consistently questioning service members (who are relocating) to determine if they will use unpacking services at their destination. Data should be gathered from pre-move counseling sessions about DOD-wide usage of unpacking services. The Department of Defense, at some point in the future, can then determine if either of these savings proposals is worth implementing.

APPENDIX A

TENDER OF SERVICE SIGNATURE SHEET

FOR USE OF THIS FORM SEE DOD 4500.34R, APPENDIX A

1811 entries must be typewritten except for signatures.

This Signature Sheet certifies that I have read and understand all the terms and conditions set forth in the TENDER OF SERVICE received from the Military Traffic Management Command (MTMC). I agree to accept and provide service under the terms and provisions of the TENDER OF SERVICE dated May 1, 1989, and all amendments thereto.

PART I - CERTIFICATION STATEMENT

I certify that I am not under common financial or administrative control with any other household goods carrier or forwarder.

Attached is a list of household goods carrier(s) or forwarder(s) which are under my common financial or administrative control.

PART II - TYPE OF SERVICE

DOMESTIC

Domestic Door-to-Door Motor Van (Code 1) Domestic Door-to-Door Container (Code 2) Alaska HHG U.S.

INTERNATIONAL

<input type="checkbox"/> Door-to-Door Container (Code 4)	<input type="checkbox"/> Door-to-Door Container Surface, Government (Code 5)	<input type="checkbox"/> Door-to-Door Air Container (Code 6)
<input type="checkbox"/> Door-to-Door Air Container (Code 7)	<input type="checkbox"/> Land-Water-Land Baggage (Code 7)	<input type="checkbox"/> Land-Air-Land Baggage (Code 8)
<input type="checkbox"/> Land-Air (MAC) Land Baggage (Code 8)		

PART III - CARRIER PROCESSING DATA

The undersigned certifies that the foregoing statements are true and complete. Any misrepresentation or falsification may be subject to prosecution under 18 USC 1001.

APPENDIX B

CUSTOMER SATISFACTION REPORT			REPORT CONTROL SYMBOL MTMTC-118 (R1)																																																																														
A. DESTINATION TRANSPORTATION OFFICE USE ONLY																																																																																	
1. MEMBER NAME (Last, First, Middle Initial)		2. GBL NUMBER OR CONTROL NUMBER	3. CODE OF SERVICE																																																																														
4. ORIGIN OF SHIPMENT (Name of Installation)		5. GBLDC	6. NAME OF CARRIER																																																																														
7. SCAC																																																																																	
B. CUSTOMER USE ONLY																																																																																	
<p>INSTRUCTIONS: Carefully read PRIVACY ACT STATEMENT and INSTRUCTIONS on inside. Answer questions below. Detach this form and PLEASE RETURN WITHIN 3 DAYS.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;"></td> <td style="width: 10%; text-align: center;">(X one)</td> <td style="width: 10%; text-align: center;">YES</td> <td style="width: 10%; text-align: center;">NO</td> <td style="width: 10%; text-align: center;">N/A</td> <td style="width: 60%;"></td> </tr> <tr> <td>1. Did mover give you an accurate and legible inventory?</td> <td></td> <td></td> <td></td> <td></td> <td>12. Use this section for your COMMENTS. A "NO" answer to questions marked "★" MUST BE EXPLAINED or your response can not be used to evaluate the mover.</td> </tr> <tr> <td>2. Did mover reassemble items he/she disassembled? ★</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3. Did mover secure movable parts of washer at origin and remove blocking material at destination? ★</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4. Was a premove survey performed? ★</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5. Did mover unpack those cartons you asked to be unpacked?</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6. Did mover record loss or damage on inventory or DD Form 1840 and provide copies?</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7. In your opinion, were the mover's personnel cooperative and courteous? ★</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8. Did mover remove packing/unpacking debris? ★</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>9. Did mover prevent loss or damage during move? If answer is "NO," please explain in Item 12.</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>10. Were you satisfied with your move? If not, explain. ★</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>11. Give estimated loss/damage sustained in move. \$</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>13. SIGNATURE OF CUSTOMER</td> <td>14. DATE SIGNED</td> <td colspan="4">FOR T.O. USE ONLY</td> </tr> </table>					(X one)	YES	NO	N/A		1. Did mover give you an accurate and legible inventory?					12. Use this section for your COMMENTS. A "NO" answer to questions marked "★" MUST BE EXPLAINED or your response can not be used to evaluate the mover.	2. Did mover reassemble items he/she disassembled? ★						3. Did mover secure movable parts of washer at origin and remove blocking material at destination? ★						4. Was a premove survey performed? ★						5. Did mover unpack those cartons you asked to be unpacked?						6. Did mover record loss or damage on inventory or DD Form 1840 and provide copies?						7. In your opinion, were the mover's personnel cooperative and courteous? ★						8. Did mover remove packing/unpacking debris? ★						9. Did mover prevent loss or damage during move? If answer is "NO," please explain in Item 12.						10. Were you satisfied with your move? If not, explain. ★						11. Give estimated loss/damage sustained in move. \$						13. SIGNATURE OF CUSTOMER	14. DATE SIGNED	FOR T.O. USE ONLY			
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DD Form 1781

Previous editions are obsolete

APPENDIX C

PERSONAL PROPERTY COUNSELING CHECKLIST		► READ "PRIVACY ACT OF 1974, UP REVERSE SIDE BEFORE COMPLETING THIS FORM.	
NAME (Last, First, Middle Initials)	SOCIAL SECURITY ACCOUNT NO.	GRADE/RANK/RATING	
ISSUING AUTHORITY	ORDER NUMBER & PARAGRAPH		DATE (YYMMDD)
PART I - HOUSEHOLD GOODS <p> <input type="checkbox"/> 1. Entitlements under the order described above (number of shipments authorized, destination, etc.) <input type="checkbox"/> 2. Weight allowances: PCS _____ TDY _____ <input type="checkbox"/> 3. Weight restrictions at new duty station, if any <input type="checkbox"/> 4. Member's responsibility to reimburse the Government for any excess costs occasioned by this/these shipments. <input type="checkbox"/> 5. Pickup date and required delivery date as determined by requirements of the member: PUD _____ RDD _____ <input type="checkbox"/> 6. Mode/method of shipment, including name of carrier if known <input type="checkbox"/> 7. Unauthorized items and disposal of useless items. <input type="checkbox"/> 8. Professional books, papers and equipment <input type="checkbox"/> 9. Member's responsibility to prepare and submit a complete DD Form 1701, Inventory of Household Goods. <input type="checkbox"/> 10. Servicing/distributing appliances <input type="checkbox"/> 11. Temporary storage (commercial or intramss). <input type="checkbox"/> 12. Checking inventory at origin and destination, noting discrepancies on reverse, PPGOL, DD Form 619, and carrier's inventory prior to signing and report them to ITO. <input type="checkbox"/> 13. Checking DD Form 619 prepared by carrier at origin for complete accuracy of information recorded thereon. <input type="checkbox"/> 14. Member's responsibility to sign delivery documents and return them to carrier immediately upon delivery of property and completion of destination delivery services and annotation of discrepancies. <input type="checkbox"/> 15. Member's responsibility to contact the destination ITO immediately upon arrival to give a point of contact for the ITO when property arrives. <input type="checkbox"/> 16. Member's responsibility to contact origin and destination ITOs if there is any change in order or there are other factors that could affect delivery of the shipments. <input type="checkbox"/> 17. Extra pickup or delivery charges, when applicable. <input type="checkbox"/> 18. Procedures to designate agent to release property or accept property in absence of member and use of Power of Attorney or informal letter of authority. <input type="checkbox"/> 19. What documentation given member and its importance to him <input type="checkbox"/> 20. Member's responsibility to complete and turn in quality control form. <input type="checkbox"/> 21. Member's responsibility to insure PP items are free of soil/pest infestation. </p>		<input type="checkbox"/> 4. Pickup date. <input type="checkbox"/> 5. Appliance servicing. <input type="checkbox"/> 6. Checking inventory at time of pickup. <input type="checkbox"/> 7. What documentation given to member and its importance to him <input type="checkbox"/> 8. Items of extraordinary value, excess weight/cost. <input type="checkbox"/> 9. Member's responsibility to reimburse the Government for any excess costs occasioned by this/these shipments. <input type="checkbox"/> 10. Unauthorized items and disposal of useless items. <input type="checkbox"/> 11. Professional books, papers and equipment. <input type="checkbox"/> 12. Member's responsibility to contact the destination ITO immediately upon arrival to give a point of contact for the ITO when property arrives. <input type="checkbox"/> 13. Procedure to designate agent to release property or accept property in absence of member and use of Power of Attorney or informal letter of authority.	
PART IV - HOUSE TRAILERS/MOBIL HOMES <p> <input type="checkbox"/> 1. Entitlements under this order, limitations, possible costs. <input type="checkbox"/> 2. Services authorized at Government expense and those billed to member. <input type="checkbox"/> 3. Responsibility of member to get trailer ready for movement. <input type="checkbox"/> 4. Inventory of contents of trailer. Items that can't remain in trailer. <input type="checkbox"/> 5. Pickup and delivery dates. <input type="checkbox"/> 6. Intramss storage and probability of excess costs. <input type="checkbox"/> 7. Carrier and Government liability. <input type="checkbox"/> 8. What documentation given to member and its importance to him <input type="checkbox"/> 9. Responsibility to promptly submit quality control information </p>		PART V - PRIVATELY OWNED VEHICLES (POV) <p> <input type="checkbox"/> 1. Does vehicle qualify as a POV. <input type="checkbox"/> 2. Authorizations, restrictions, special Host Government requirements. <input type="checkbox"/> 3. Applicable ports of embarkation and debarkation; alternatives if needed. <input type="checkbox"/> 4. Preparation of POV prior to delivery to port. <input type="checkbox"/> 5. Application and other documents required; Power of Attorney if required. <input type="checkbox"/> 6. Excess costs, when applicable; overloads; excess distance. <input type="checkbox"/> 7. Checking inventory of items left in POV; origin and destination. <input type="checkbox"/> 8. Secure title holder's permission if required. <input type="checkbox"/> 9. Responsibility to provide Port of Disembarkation proper address where notification of arrival can be sent; period POV can remain at port. <input type="checkbox"/> 10. Point inspection of POV at time of delivery and pickup. <input type="checkbox"/> 11. Licensing and insurance requirements of state or overseas country. <input type="checkbox"/> 12. Foreign manufactured POVs. <input type="checkbox"/> 13. Delivery of POV to port by agent; special requirement for. </p>	
PART VI - WEAPONS AND AMMUNITION <p> <input type="checkbox"/> 1. Limitations and restrictions of country to which assigned. <input type="checkbox"/> 2. US Government requirements and restrictions applicable for import. <input type="checkbox"/> 3. Specific forms and procedures; responsibilities of carriers, etc. </p>		PART VII - LIABILITY, CLAIMS, PROTECTION <p> <input type="checkbox"/> 1. Carrier, storage firm and Government liability for loss or damage. <input type="checkbox"/> 2. Carrier and Government liability for mobil home. Liability for repairs ensured. <input type="checkbox"/> 3. Carrier and Government liability for POV. <input type="checkbox"/> 4. Limitations on Government liability. <input type="checkbox"/> 5. Importance of documentation - accurate inventory exception on delivery, etc. <input type="checkbox"/> 6. Valuation of items of extraordinary value/substantial value. <input type="checkbox"/> 7. Whom to see at destination in the event of loss or damage. </p>	
RECORD SPECIAL INSTRUCTIONS ON REVERSE			
CONFIRMATION OF COUNSELING - I understand that it is best to ship my household goods at Government expense to a designated location when the working period for any type of housing at or in the vicinity of the overseas duty station is less than 20 weeks (as determined by the overseas commander) and that for longer periods, the cost of shipping my household goods will be reimbursed until such time as I receive subsequent PCS orders referring me to CONUS or assigning me to another overseas duty station.			
I HAVE BEEN BRIEFED RELATIVE TO THE DISPOSITION OF MY PERSONAL PROPERTY AS FOLLOWS:			
HOUSEHOLD GOODS <input type="checkbox"/> YES <input type="checkbox"/> NO NONTEMPORARY STORAGE <input type="checkbox"/> YES <input type="checkbox"/> NO PRIVATELY OWNED VEHICLES <input type="checkbox"/> YES <input type="checkbox"/> NO LOSS AND DAMAGE <input type="checkbox"/> YES <input type="checkbox"/> NO UNACCOMPANIED BAGGAGE <input type="checkbox"/> YES <input type="checkbox"/> NO	MOBIL HOMES (12/73 DD Directive 60-1000) <input type="checkbox"/> YES <input type="checkbox"/> NO WEAPONS AND AMMUNITION <input type="checkbox"/> YES <input type="checkbox"/> NO I HAVE BEEN FURNISHED A COPY OF THE PERSONAL PROPERTY SHIPPING INFORMATION FAMFILET <input type="checkbox"/> YES <input type="checkbox"/> NO		
SIGNATURE OF COUNSELOR	SIGNATURE OF MEMBER/DEPENDENT/AGENT	DATE (YYMMDD)	

DD FORM 82 JUL 1797

EDITION OF 1 MAR 77 WILL BE USED UNTIL SUPPLY IS EXHAUSTED.

5010-108-0702-700-700-700

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